Appendix H

Rat and Mouse Oral LD_{50} Database

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Appendix H-1

Rat and Mouse Oral LD_{50} Database

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CHEMICAL[1]	LD50[2] mg/kg oral rat RTECS 2002	LD50[3] mg/kg oral rat Primary Reference	LD50[4] mg/kg (range) Primary Reference	LD50 CALCULATION METHOD[5] Primary Reference	ANIMAL INFORMATION (stock, weight, age)	GENDER	ROUTE/ METHOD OF EXPOSURE[6]	DOSE	OBSERVATIONS	NOTES	CHEMICAL SOURCE	PRIMARY REFERENCE
1,1,1-Trichloroethane	9600	9600	7384 - 12480	NA	rats	NA	oral	NA	NA	reference in Russian	NA	**RTECS REFERENCE** *CODEN: GNAMAP Bibliographic Data: Gigiena Naselennykh Mest. Hygiene in Populated Places. (Izdatel'stvo Zdorov'ya, Kiev, USSR) V.7- 1967- CODEN Reference: 29,45,1990.---* Paligov VI, Khananaev LI, Goinatskii MG, Gavrilyuk VM. 1990. Hygienic substantiation of content of methylchloroform in water bodies. Gigiena Naselennykh Mest 29:45-49.
1,1,1-Trichloroethane	9600	10300	8270 - 12800 (95% CL)	Thompson method of moving averages	Wistar white rats; 175 - 250 g	female	oral; stomach tube	single dose; undiluted; no more than 7 cc administered	all surviving rats observed up to 2 weeks; 35 rats used	NA	NA	Torkelson TR, Oyen F, McCollister DD, Rowe VK. 1958. Toxicity of 1,1,1-trichloroethane as determined on laboratory animals and human subjects. Am Ind Hyg Assoc J 19:353-362. *The Dow Chemical Company, Midland, MI*
1,1,1-Trichloroethane	9600	12300	11000 - 13700 (95% CL)	Thompson method of moving averages	Wistar white rats; 175 - 250 g	male	oral; stomach tube	single dose; undiluted; no more than 7 cc administered	all surviving rats observed up to 2 weeks; 35 rats used	this compound is an inhibited form	NA	Torkelson TR, Oyen F, McCollister DD, Rowe VK. 1958. Toxicity of 1,1,1-trichloroethane as determined on laboratory animals and human subjects. Am Ind Hyg Assoc J 19:353-362. *The Dow Chemical Company, Midland, MI*
1,1,1-Trichloroethane	9600	12600	926 - 17100 (CL)	Litchfield and Wilcoxon	Holtzman, Sprague-Dawley albino rats; 215-330 g; adult	male	oral; gastric intubation	single dose; undiluted; 464, 1000, 2150, 4660, 10000, 21500 mg/kg doses	observations recorded at 1, 4, 24 hours, daily thereafter for 7 days; 5 dead at highest dose; depression, ataxia, labored respiration, salivation, ptosis, excessive urination, diarrhea	3-4 hour fasting period; stabilized 1,1,1-trichloroethane; inhibited formulation	NA	from EPA TSCATS database; Acute Oral Administration-Rats Acute Dermal Application-Rabbits Acute Eye Irritation-Rabbits Primary Skin Irritation-Rabbits Subacute (Four-Week) Inhalation; 1969. EPA Doc. No. 878210366, Fiche No. OTS0205891; *Ethyl Corp.*
1,1,1-Trichloroethane	9600	12627	5356 - 29765 (CL)	Litchfield and Wilcoxon	Holtzman, Sprague-Dawley albino rats; 215-330 g; adult	male	oral; gastric intubation	single dose; undiluted; 464, 1000, 2150, 4660, 10000, 21500 mg/kg doses	observations recorded at 1, 4, 24 hours, daily thereafter for 7 days; 5 dead at highest dose; depression, ataxia, labored respiration, salivation, ptosis	3-4 hour fasting period; stabilized 1,1,1-trichloroethane; inhibited formulation	NA	from EPA TSCATS database; Acute Oral Administration-Rats Acute Dermal Application-Rabbits Acute Eye Irritation-Rabbits Primary Skin Irritation-Rabbits Subacute (Four-Week) Inhalation; 1969. EPA Doc. No. 878210366, Fiche No. OTS0205891; *Ethyl Corp.*
1,1,1-Trichloroethane	9600	16000	no CL ("all-or-none" response)	Litchfield and Wilcoxon	Holtzman, Sprague-Dawley albino rats; 215-330 g; adult	male	oral; gastric intubation	single dose; undiluted; 464, 1000, 2150, 4660, 10000, 21500 mg/kg doses	observations recorded at 1, 4, 24 hours, daily thereafter for 7 days; 4 dead at highest dose; depression, ataxia, labored respiration, excessive urination, diarrhea, ruffled fur, salivation, piloerection	3-4 hour fasting period; unstabilized 1,1,1-trichloroethane	NA	from EPA TSCATS database; Acute Oral Administration-Rats Acute Dermal Application-Rabbits Acute Eye Irritation-Rabbits Primary Skin Irritation-Rabbits Subacute (Four-Week) Inhalation; 1969. EPA Doc. No. 878210366, Fiche No. OTS0205891; *Ethyl Corp.*
2-Propanol	5045	4074 (5.19 mL/kg; sp. density = 0.78505; convert LD50 to mg/kg)	3015 - 5503	moving average method	Wistar rats; 90-120 g; 3-4 weeks old	male	oral; stomach intubation	doses differ by a factor of 2 in a geometric series	14 day observation; dose, number of dead/total: 16 mL/kg -- 3/3; 8 mL/kg -- 5/5; 4 mL/kg -- 1/5	non-fasted; tested in 1975; 13 rats used	NA	from EPA TSCATS database; Range Finding Toxicity Studies With Isopropanol Recovery Column, Side Stream Decanter Make With Cover Letter Dated 020987; EPA Document No. 86870000097 Fiche No. OTS0513282; *Union Carbide Corp.; Carnegi Mellon 1976*
2-Propanol	5045	4396 (5.6 mL/kg; sp. density = 0.78505; convert LD50 to mg/kg)	3297 - 5809 (95% CL; 4.2 - 7.4 mL/kg; sp. density = 0.78505; convert LD50 to mg/kg)	Litchfield and Wilcoxon method and probit analysis	Sprague-Dawley rats; 16-50 g; 14 days	male and female	oral	solvent used in undiluted form	animals observed for a week after medication	nonfasted rats; 6-12 rats of both sexes used for studies; solvent used in undiluted form	analytical grade meeting A.C.S. specifications	Kimura ET, Ebert DM, Dodge PW. 1971. Acute toxicity and limits of solvent residue for sixteen organic solvents. Toxicol Appl Pharmacol 19:699-704. *Abbott Laboratories, Chicago, IL*
2-Propanol	5045	4500	3500 - 5800 (95% CL)	UDP	Sprague-Dawley rats; ~ 7 weeks	female	oral gavage	undiluted dose (g/kg) 3.5, 4.5, 5.8, 7.5	clinical observations: soft stools, diarrhea, decreased limb tone, hypoactivity, hypothermia, lacrimation, pinna and pain reflex absent, red-stained nose, mouth, and eyes, dyspnea, brown-stained urogenital or anal region, bradypnea and piloerection, ataxia; dose (g/kg), rats dead: 3.5-0/2; 4.5-2/4; 5.8-2/2; 7.5-1/1	18-20 hour fasted rats; 1-4 rats per dose; GLP study	NA	from EPA TSCATS database; Acute Oral Toxicity (Up/Down Method) Report with Cover Letter Dated 020987; 1983. EPA Document No. 86870000160, Fiche No. OTS0513345; *Hazelton Labs;* Hazelton 1983
2-Propanol	5045	4710 (6.0 mL/kg; sp. density = 0.78505; convert LD50 to mg/kg)	4082 - 5495 (95% CL; 5.2 - 7.0 mL/kg; sp. density = 0.78505; convert LD50 to mg/kg)	Litchfield and Wilcoxon method and probit analysis	Sprague-Dawley rats; 80-160 g; young adult (4-6 weeks according to Taconic Farms)	male	oral	solvent used in undiluted form	animals observed for a week after medication	nonfasted rats; groups of 6 rats used for the studies; solvent used in undiluted form	analytical grade meeting A.C.S. specifications	Kimura ET, Ebert DM, Dodge PW. 1971. Acute toxicity and limits of solvent residue for sixteen organic solvents. Toxicol Appl Pharmacol 19:699-704. *Abbott Laboratories, Chicago, IL*
2-Propanol	5045	5045	4650 - 5400	NA	rats	female?	oral	NA	NA	reference in Russian	NA	**RTECS REFERENCE** *CODEN: GISAAA Bibliographic Data: Gigiena i Sanitariya. For English translation, see HYSAAV. (V/O Mezhdunarodnaya Kniga, 113095 Moscow, USSR) V.1-1936- CODEN Reference: 43(1),8,1978.----* Antonova VI, Salmina ZH. 1978. The maximal permissible concentration of isopropyl alcohol in water bodies with due regards for its action on the gonads and the progeny. Gigiena i Sanitariya 43(1):9-11.
2-Propanol	5045	5087 (6.48 mL/kg; sp. density = 0.78505; convert LD50 to mg/kg)	3768 - 6877	moving average method	Wistar rats; 90-120 g; 3-4 weeks old	male	oral; stomach intubation	doses differ by a factor of 2 in a geometric series	14 day observation;dose, number of dead/total: 10mL/kg - 5/5; 5 mL/kg - 1/5	non-fasted; tested in 1971; 10 rats used	NA	from EPA TSCATS database; Isopropanol, Anhydrous Range Finding Toxicity Studies with Cover Letter Dated 020987, (1971), EPA Document No. 86870000102, Fiche No. OTS0513287; *Carnegie-Mellon Inst. of Res. 1971*

CHEMICAL[1]	LD50[2] mg/kg oral rat RTECS 2002	LD50[3] mg/kg oral rat Primary Reference	LD50[4] mg/kg (range) Primary Reference	LD50 CALCULATION METHOD[5] Primary Reference	ANIMAL INFORMATION (stock, weight, age)	GENDER	ROUTE/ METHOD OF EXPOSURE[6]	DOSE	OBSERVATIONS	NOTES	CHEMICAL SOURCE	PRIMARY REFERENCE
2-Propanol	5045	5300	4100 - 7000 (95% CL)	UDP	Sprague-Dawley rats; ~ 7 weeks	male	oral gavage	undiluted dose (g/kg) 4.5, 5.8, 7.5, 9.8	clinical observations: soft stools, diarrhea, ataxia, decreased limb tone, hypoactivity, hypothermia, lacrimation, pinna and pain reflex absent, red-stained nose, mouth and eyes, brown-stained urogenital or anal region, dyspnea, bradypnea and piloerection; dose (g/kg), rats dead: 4.5 - 0/2; 5.8 - 2/3; 7.5 - 3/3; 9.8 - 1/1	18-20 hour fasted rats; 1-3 rats per dose; GLP study	NA	from EPA TSCATS database; Acute Oral Toxicity (Up/Down Method) Report with Cover Letter Dated 020987, (1983), EPA Document No. 86870000160, Fiche No. OTS0513345; *Hazelton Labs;* Hazelton 1983
2-Propanol	5045	5338 (6.8 mL/kg; sp.density is 0.78505; convert LD50 to mg/kg)	4161 - 6908 (95% CL; 5.3 - 8.8 mL/kg; sp. density = 0.78505; convert LD50 to mg/kg)	Litchfield and Wilcoxon method and probit analysis	Sprague-Dawley rats; 300-470 g; older adult (9-18 weeks according to Taconic Farms)	male	oral	solvent used in undiluted form	animals observed for a week after medication	nonfasted rats; groups of 6 rats used for the studies; solvent used in undiluted form	analytical grade meeting A.C.S. specifications	Kimura ET, Ebert DM, Dodge PW. 1971. Acute toxicity and limits of solvent residue for sixteen organic solvents. Toxicol Appl Pharmacol 19:699-704. *Abbott Laboratories, Chicago, IL*
2-Propanol	5045	5840	NA	based on assumption that probit mortality vs log dose has same slope as similar chemical	Sherman rats; 90 - 120 g; 4-5 weeks	male	oral gastric intubation	in aqueous solution; doses (in g/kg) differ by 1 log to bracket LD50, then refine LD50 with doses in a series of antilog 1.1, 1.3, 1.5, etc	LD50 based on mortalities during a 14 day period	6 rats/dose at doses that differ by 1 log to bracket LD50 (given 1 week apart); then refined LD50 with 10 rats/dose in a dose series of antilog 1.1, 1.3, 1.5, etc.; assumed to use materials/methods of Smyth & Carpenter (1944) except for reported changes	reagent grade	Smyth HF Jr, Carpenter CP. 1948. Further experience with the range finding test in the industrial toxicology laboratory. J Ind Hyg Toxicol 30: 63-68. (LD50 value) Smyth HF Jr, Carpenter CP. 1944. The place of the range-finding test in the industrial toxicology laborotory. J Ind Hyg Toxicol 26:269-273. (most materials/methods)
5-Aminosalicylic acid	2800	2800	1781 - 3819 (95% CL)	Miller and Tainter (1944)	CDR Sprague-Dawley albino rats; male 288-346 g; 9-12 weeks old	male	oral; intubation	single dose; 2500, 3500, 5000 mg/kg doses; conc. 250, 350, 500 mg/mL; 10 mL dose vol.; methylcellulose vehicle	14 day observation; initial checks at 1, 2, and 4 hours after administration; 2 daily thereafter	15 rats used (five/dose level); fasted overnight; GLP	Monsanto Company	from EPA TSCATS database; Acute Toxicity Study in Rats Administered 10 Materials (final report) with Cover Letter dated 062669, (1969), EPA Doc. No. 40-6942188, Fiche No. OTS0519234; *Monsanto Co./Bio/dynamics*
5-Aminosalicylic acid	2800	3450	2513 - 4387 (95% CL)	Miller and Tainter (1944)	CDR Sprague-Dawley albino rats; male 288-346 g; female 225-267 g; 9-12 weeks old	male and female (equal numbers)	oral; intubation	single dose; 2500, 3500, 5000 mg/kg doses; conc. 250, 350, 500 mg/mL; 10 mL dose vol.; methylcellulose vehicle	14 day observation; initial checks at 1, 2, and 4 hours after administration; 2 daily thereafter	30 rats used (five/sex/dose level); fasted overnight; GLP; used same animals as 2800 and 4200 mg/kg values from Monsanto 1969	Monsanto Company	from EPA TSCATS database; Acute Toxicity Study in Rats Administered 10 Materials (final report) with Cover Letter dated 062669, (1969), EPA Doc. No. 40-6942188, Fiche No. OTS0519234; *Monsanto Co./Bio/dynamics*
5-Aminosalicylic acid	2800	4200	2863 - 5537 (95% CL)	Miller and Tainter (1944)	CDR Sprague-Dawley albino rats; female 225-267 g; 9-12 weeks old	female	oral; intubation	single dose; 2500, 3500, 5000 mg/kg doses; conc. 250, 350, 500 mg/mL; 10 mL dose vol.; methylcellulose vehicle	14 day observation; initial checks at 1, 2, and 4 hours after administration; 2 daily thereafter; toxicologic signs: soft stool, hyponea, hypoactivity; urinary and fecal staining	15 rats used (five/dose level); fasted overnight; GLP	Monsanto Company	from EPA TSCATS database; Acute Toxicity Study in Rats Administered 10 Materials (final report) with Cover Letter dated 062669, (1969), EPA Doc. No. 40-6942188, Fiche No. OTS0519234; *Monsanto Co./Bio/dynamics*
Acetaminophen	1944	1944	NA	Litchfield and Wilcoxon	Wistar rats; 130-150 g	male and female	stomach tube	5 mL/kg bw in 1% carboxymethyl-cellulose	observed 3 weeks	fasted 18 hours before dosing	NA	**RTECS REFERENCE** *Kammerer F-J, Schleyerbach R. 1987. U.S. Patent 4,636,513. Isoxazole derivatives and medicaments containing these compounds (January 13, 1987).*
Acetaminophen	1944	2404	+/- 95 (S.E.)	Miller and Tainter (1944)	Charles River CD and Sprague-Dawley rat strains; > 100 g; adult	NA	oral intubation	up to 50 mL/kg	rats observed for 7 days; observed up to 14 days when heavy metals or other compounds that produce latent death were investigated	fasted overnight	NA	Yeary RA, Benish RA, Finkelstein M. 1966. Acute Toxicity of Drugs in Newborn Animals. Journal of Pediatrics 69(4):663-667. *Dept. of Veterinary Preventive Medicine, Ohio State University, Columbus, OH*
Acetonitrile	2460	157 (0.2 mL/kg; sp. density = 0.7857; convert LD50 to mg/kg	79 - 236 (95% CL; 0.1 - 0.3 mL/kg; sp. density = 0.7857; convert LD50 to mg/kg)	Litchfield and Wilcoxon method and probit analysis	Sprague-Dawley rats; 16-50 g; 14 days	male and female	oral	solvent used in undiluted form	animals observed for a week after medication	nonfasted rats; 6-12 rats of both sexes used for studies; solvent used in undiluted form	analytical grade meeting A.C.S. specifications	Kimura ET, Ebert DM, Dodge PW. 1971. Acute toxicity and limits of solvent residue for sixteen organic solvents. Toxicol Appl Pharmacol 19:699-704. *Abbott Laboratories, Chicago, IL*
Acetonitrile	2460	1320 (1.68 mL/kg; sp. density = 0.7839; convert LD50 to mg/kg)	972 - 1799 (1.24 - 2.27 mL/kg; sp. density = 0.7839; convert LD50 to mg/kg)	NA	Carworth Farms Wistar or Nelson albino rats; 90-112g	male	oral gastric intubation	undiluted cmpd; single dose	NA	non-fasted	Union Carbide Chemicals Company	Pozzani UC, Carpenter CP, Palm PE, Weil CS, Nair JH. 1959. An investigation of the mammalian toxicity of acetonitrile. J Occup Med 1: 634-642. *Mellon Institute, Pittsburgh, PA*
Acetonitrile	2460	1453	1123 - 1879 (95% CL)	acceptable methods (e.g., Bliss, Litchfield and Wilcoxon, Weil, Thompson, etc.)	Sprague-Dawley rats	male	oral gavage	single dose	14 day observation; toxicity symptoms: ptosis, posture, respiratory effects, lethargy, ataxia, convulsions; time to onset of signs < 1 day; duration of signs 5 days; 5 rats dead (average per test)	3 dose levels (5 male each); 15 rats used; OECD TG401 (1981) followed for experimental procedures	NA	Vandenheuvel MJ, Clark DG, Fielder RJ, Koundakjian PP, Oliver GJA, Pelling D, Tomlinson NJ, Walker AP. 1990. Jul. The International Validation Of A Fixed-Dose Procedure As An Alternative To The Classical LD50 Test Food And Chemical Toxicology 28(7):469-482.
Acetonitrile	2460	1623 (2.07 mL/kg; sp. density = 0.7839; convert LD50 to mg/kg	1050 - 2524 (1.34 - 3.22 mL/kg; sp. density = 0.7839; convert LD50 to mg/kg	NA	Carworth Farms Wistar or Nelson albino rats; 90-112g	male	oral gastric intubation	undiluted cmpd; single dose	NA	non-fasted	Union Carbide Chemicals Company	Pozzani UC, Carpenter CP, Palm PE, Weil CS, Nair JH. 1959. An investigation of the mammalian toxicity of acetonitrile. J Occup Med 1: 634-642. *Mellon Institute, Pittsburgh, PA*
Acetonitrile	2460	1730	1100 - 2720	NA	Carworth Farms Wistar or Nelson albino rats; 90-112g	female	oral gastric intubation	0.1 in corn oil; single dose	NA	non-fasted	Union Carbide Chemicals Company	Pozzani UC, Carpenter CP, Palm PE, Weil CS, Nair JH. 1959. An investigation of the mammalian toxicity of acetonitrile. J Occup Med 1: 634-642. *Mellon Institute, Pittsburgh, PA*

CHEMICAL[1]	LD50[2] mg/kg oral rat RTECS 2002	LD50[3] mg/kg oral rat Primary Reference	LD50[4] mg/kg (range) Primary Reference	LD50 CALCULATION METHOD[5] Primary Reference	ANIMAL INFORMATION (stock, weight, age)	GENDER	ROUTE/ METHOD OF EXPOSURE[6]	DOSE	OBSERVATIONS	NOTES	CHEMICAL SOURCE	PRIMARY REFERENCE
Acetonitrile	2460	> 2000	NA	acceptable methods (e.g., Bliss, Litchfield and Wilcoxon, Weil, Thompson, etc.)	Sprague-Dawley rats	female	oral gavage	single dose	14 day observation; toxicity symptoms: Ptosis, posture, respiratory effects, lethargy, ataxia, convulsions; time to onset of signs < 1day; duration of signs 5 days; 5 rats dead (average per test)	3 dose levels (5 female each); 15 rats used; OECD TG401 (1981) followed for experimental procedures		Vandenheuvel MJ, Clark DG, Fielder RJ, Koundakjian PP, Oliver GJA, Pelling D, Tomlinson NJ, Walker AP. 1990. Jul. The International Validation Of A Fixed-Dose Procedure As An Alternative To The Classical LD50 Test Food And Chemical Toxicology 28: (7) 469-482.
Acetonitrile	2460	2230	1900 - 2620	NA	Carworth Farms Wistar or Nelson albino rats; 30-54 g; weanlings	female	oral gastric intubation	0.1 in 1% aqueous Tergitol 7; single dose	NA	non-fasted	Union Carbide Chemicals Company	Pozzani UC, Carpenter CP, Palm PE, Weil CS, Nair JH. 1959. An investigation of the mammalian toxicity of acetonitrile. J Occup Med 1: 634-642. *Mellon Institute, Pittsburgh, PA*
Acetonitrile	2460	2340	2030 - 2700	NA	Carworth Farms Wistar or Nelson albino rats; 90-112g	female	oral gastric intubation	0.1 in 1% aqueous Tergitol 7; single dose	NA	non-fasted	Union Carbide Chemicals Company	Pozzani UC, Carpenter CP, Palm PE, Weil CS, Nair JH. 1959. An investigation of the mammalian toxicity of acetonitrile. J Occup Med 1: 634-642. *Mellon Institute, Pittsburgh, PA*
Acetonitrile	2460	2460	1600 - 2780	NA	Carworth Farms Wistar or Nelson albino rats; 90-120g	male	oral gastric intubation	0.1 in water; single dose	NA	non-fasted	Union Carbide Chemicals Company	Pozzani UC, Carpenter CP, Palm PE, Weil CS, Nair JH. 1959. An investigation of the mammalian toxicity of acetonitrile. J Occup Med 1: 634-642. *Mellon Institute, Pittsburgh, PA*
Acetonitrile	2460	2460	NA	NA	rat	NA	oral	NA	NA	Duplicate record. Assumed to be the same values from Pozzani et al. (1959), Mellon Institute and Union Carbide.	NA	**RTECS REFERENCE** *CODEN: UCDS** Bibliographic Data: Union Carbide Data Sheet. (Union Carbide Corp., 39 Old Ridgebury Rd., Danbury, CT 06817) CODEN Reference: 3/18/1965.*
Acetonitrile	2460	2830	NA	Thompson (1947) and Weil (1952); moving average tables	Manor farms Wistar; 150-200 g	male	oral; stomach intubation	single dose; geometric factor between dosage levels=2; undiluted	14 day observation	5 rats per dosage level; fasted overnight	NA	Weil CS, Wright GJ. 1967. Intra- and Interlaboratory Comparative Evaluation of Single Oral Test. Toxicology and Applied Pharmacology 11:378-388. *Mellon Institute, Pittsburgh, PA and The Dow Chemical Company, Midland, MI*
Acetonitrile	2460	3064 (3.9 mL/kg; sp. density = 0.7857; convert LD50 to mg/kg)	2593 - 3614 (95% CL; 3.3 - 4.6 mL/kg; sp. density = 0.7857; convert LD50 to mg/kg)	Litchfield and Wilcoxon method and probit analysis	Sprague-Dawley rats; 80-160 g; young adult	male	oral	solvent used in undiluted form	animals observed for a week after medication	nonfasted rats; groups of 6 rats used for the studies; solvent used in undiluted form	analytical grade meeting A.C.S. specifications	Kimura ET, Ebert DM, Dodge PW. 1971. Acute toxicity and limits of solvent residue for sixteen organic solvents. Toxicol Appl Pharmacol 19:699-704. *Abbott Laboratories, Chicago, IL*
Acetonitrile	2460	3360	NA	Thompson (1947) and Weil (1952); moving average tables	Manor farms Wistar rats; 150-200 g	male	oral; stomach intubation	single dose; geometric factor between dosage levels=2; undiluted	14 day observation	5 rats per dosage level; fasted overnight	NA	Weil CS, Wright GJ. 1967. Intra- and Interlaboratory Comparative Evaluation of Single Oral Test. Toxicology and Applied Pharmacology 11:378-388. *Mellon Institute, Pittsburgh, PA and The Dow Chemical Company, Midland, MI*
Acetonitrile	2460	3457 (4.4 mL/kg; sp. density = 0.7857; convert LD50 to mg/kg)	2200 - 5343 (95% CL; 2.8 - 6.8 mL/kg; sp. density = 0.7857; convert LD50 to mg/kg)	Litchfield and Wilcoxon method and probit analysis	Sprague-Dawley rats; 300-470 g; older adult	male	oral	solvent used in undiluted form	animals observed for a week after medication	nonfasted rats; groups of 6 rats used for the studies; solvent used in undiluted form	analytical grade meeting A.C.S. specifications	Kimura ET, Ebert DM, Dodge PW. 1971. Acute toxicity and limits of solvent residue for sixteen organic solvents. Toxicol Appl Pharmacol 19:699-704. *Abbott Laboratories, Chicago, IL*
Acetonitrile	2460	3504 (4.47 mL/kg; sp. density = 0.7839; convert LD50 to mg/kg)	2187 - 5613 (2.79 - 7.16 mL/kg; sp. density is 0.7839; convert LD50 to mg/kg)	NA	Carworth Farms Wistar or Nelson albino rats; 84-114 g	male	oral gastric intubation	undiluted cmpd; single dose	NA	fasted	Union Carbide Chemicals Company	Pozzani UC, Carpenter CP, Palm PE, Weil CS, Nair JH. 1959. An investigation of the mammalian toxicity of acetonitrile. J Occup Med 1: 634-642. *Mellon Institute, Pittsburgh, PA*
Acetonitrile	2460	3520 (4.49 mL/kg; sp. density = 0.7839; convert LD50 to mg/kg)	1419 - 8748 (1.81 - 11.16 mL/kg; sp. density = 0.7839; convert LD50 to mg/kg)	NA	Carworth Farms Wistar or Nelson albino rats; 90-120g	male	oral gastric intubation	undiluted cmpd; single dose	NA	non-fasted	Union Carbide Chemicals Company	Pozzani UC, Carpenter CP, Palm PE, Weil CS, Nair JH. 1959. An investigation of the mammalian toxicity of acetonitrile. J Occup Med 1: 634-642. *Mellon Institute, Pittsburgh, PA*
Acetonitrile	2460	3570	NA	Thompson (1947) and Weil (1952); moving average tables	Manor farms Wistar; 150-200 g	male	oral; stomach intubation	single dose; geometric factor between dosage levels=2; undiluted	14 day observation	5 rats per dosage level; fasted overnight	NA	Weil CS, Wright GJ. 1967. Intra- and Interlaboratory Comparative Evaluation of Single Oral Test. Toxicology and Applied Pharmacology 11:378-388. *Mellon Institute, Pittsburgh, PA and The Dow Chemical Company, Midland, MI*
Acetonitrile	2460	3717 (4.49 mL/kg; sp. density = 0.7839; convert LD50 to mg/kg)	1921 - 6436 (2.45 - 8.21mL/kg; sp. density = 0.7839; convert LD50 to mg/kg)	NA	Carworth Farms Wistar or Nelson albino rats; 250 - 318 g; yearlings	female	oral gastric intubation	undiluted cmpd; single dose	NA	non-fasted	Union Carbide Chemicals Company	Pozzani UC, Carpenter CP, Palm PE, Weil CS, Nair JH. 1959. An investigation of the mammalian toxicity of acetonitrile. J Occup Med 1: 634-642. *Mellon Institute, Pittsburgh, PA*
Acetonitrile	2460	3800	NA	based on assumption that probit mortality vs log dose has same slope as similar chemical	Sherman rats; 90 - 120 g; 4-5 weeks	male	oral gastric intubation	in aqueous solution; doses (in g/kg) differ by 1 log to bracket LD50, then refine LD50 with doses in a series of antilog 1.1, 1.3, 1.5, etc	LD50 based on mortalities during a 14 day period	6 rats/dose at doses (in g/kg) that differ by 1 log to bracket LD50 (given 1 week apart); then refined LD50 with 10 rats/dose in a dose series of antilog 1.1, 1.3, 1.5, etc.; assumed to use materials/methods of Smyth & Carpenter (1944) except for reported changes. Reference for RC	reagent grade	Smyth HF Jr, Carpenter CP. 1948. Further experience with the range finding test in the industrial toxicology laboratory. J Ind Hyg Toxicol 30:63-68. *(RC and 1983/84 RTECS LD50 value)* ---- Smyth HF Jr, Carpenter CP. 1944. The place of the range-finding test in the industrial toxicology laborotory. J Ind Hyg Toxicol 26:269-273. (most materials/methods)

CHEMICAL[1]	LD50[2] mg/kg oral rat RTECS 2002	LD50[3] mg/kg oral rat Primary Reference	LD50[4] mg/kg (range) Primary Reference	LD50 CALCULATION METHOD[5] Primary Reference	ANIMAL INFORMATION (stock, weight, age)	GENDER	ROUTE/ METHOD OF EXPOSURE[6]	DOSE	OBSERVATIONS	NOTES	CHEMICAL SOURCE	PRIMARY REFERENCE
Acetonitrile	2460	4050		Litchfield and Wilcoxon (1948)	Sprague-Dawley rats; 175-260 g		oral	undiluted; 3220 - 4970 mg/kg doses	observatons recorded frequently on the day of dosing, daily thereafter for 14 days; tremors, clonic/tonic convulsions, weight loss; clinical signs appeared within 3 hour after dosing and progessed to death in 24-72 hour	overnight fasted; groups of at least 5 rats per dose	99+%; Aldrich Chemical Co.	Freeman JJ, Hayes EP. 1985. Acetone potentiation of acute acetonitrile toxicity in rats. J Toxicol Environ Hlth 15:609-621. *Rutgers University, Piscataway, NJ*
Acetonitrile	2460	4240	NA	Thompson (1947) and Weil (1952); moving average tables	Manor farms Wistar rats; 150-200 g	male	oral; stomach intubation	single dose; geometric factor between dosage levels = 2; undiluted	14 day observation	5 rats per dosage level; fasted overnight		Weil CS, Wright GJ. 1967. Intra- and Interlaboratory Comparative Evaluation of Single Oral Test. Toxicology and Applied Pharmacology 11:378-388. *Mellon Institute, Pittsburgh, PA and The Dow Chemical Company, Midland, MI*
Acetonitrile	2460	4490	2460 - 8210	NA	Carworth Farms Wistar or Nelson albino rats; 240-425 g; yearlings	female	oral gastric intubation	0.1 in 1% aqueous Tergitol 7; single dose		non-fasted	Union Carbide Chemicals Company	Pozzani UC, Carpenter CP, Palm PE, Weil CS, Nair JH. 1959. An investigation of the mammalian toxicity of acetonitrile. J Occup Med 1: 634-642. *Mellon Institute, Pittsburgh, PA*
Acetonitrile	2460	4850	NA	Thompson (1947) and Weil (1952); moving average tables	Manor farms Wistar rats; 150-200 g	male	oral; stomach intubation	single dose; geometric factor between dosage levels = 2; undiluted	14 day observation	5 rats per dosage level; fasted overnight		Weil CS, Wright GJ. 1967. Intra- and Interlaboratory Comparative Evaluation of Single Oral Test. Toxicology and Applied Pharmacology 11:378-388. *Mellon Institute, Pittsburgh, PA and The Dow Chemical Company, Midland, MI*
Acetonitrile	2460	5244 (6.69 mL/kg; sp. density = 0.7839; convert LD50 to mg/kg)	3222 - 8545 (1.34 - 3.22 mL/kg; sp. density = 0.7839; convert LD50 to mg/kg)	NA	Carworth Farms Wistar or Nelson albino rats; 82-109 g	male	oral gastric intubation	undiluted cmpd; single dose	NA	fasted	Union Carbide Chemicals Company	Pozzani UC, Carpenter CP, Palm PE, Weil CS, Nair JH. 1959. An investigation of the mammalian toxicity of acetonitrile. J Occup Med 1: 634-642. *Mellon Institute, Pittsburgh, PA*
Acetonitrile	2460	5450	NA	Thompson (1947) and Weil (1952); moving average tables	Manor farms Wistar rats; 150-200 g	male	oral; stomach intubation	single dose; geometric factor between dosage levels = 2; undiluted	14 day observation	5 rats per dosage level; fasted overnight	NA	Weil CS, Wright GJ. 1967. Intra- and Interlaboratory Comparative Evaluation of Single Oral Test. Toxicology and Applied Pharmacology 11:378-388. *Mellon Institute, Pittsburgh, PA and The Dow Chemical Company, Midland, MI*
Acetonitrile	2460	5900	4580 - 7220	NA	rats; 220 +/- 40 g	NA	oral; intragastric	NA	NA	(source of information not provided)	NA	Izmerov NF, Sanotsky IV, Sidorov KK. 1982. Toxicometric Parameters of Industrial Toxic Chemicals under Single Exposure. International Register of Potentially Toxic Chemicals (IRPTC). United Nations Environment Programme (UNEP). Centre of International Projects, GKNT. Moscow, Russia.
Acetonitrile	2460	6498 (8.27 mL/kg; sp. density = 0.7857; convert LD50 to mg/kg)	NA	Thompson method; Weil tables	Carworth-Wistar rats; 90 -120 g; 4 - 5 weeks	male	oral gastric intubation	in aqueous solution; concentration intubated = 10 mg/mL; dosages arranged in a logarithmic series differing by a factor of 2	LD50 based on mortalities during a 14 day period	non-fasted; groups of 5 rats; single oral dose toxicity	reagent grade	Smyth HF, Weil CS, West JS, Carpenter CP. 1970. An exploration of joint toxic action:II. Equitoxic versus equivolume mixtures. Toxicol Appl Pharmacol 17:498-503. (LD50 value) Smyth HF Jr., Carpenter CP., Weil CS., Pozzani, UC., Striegel, JA. And Nycum, JS. 1969. Range-finding toxicity data: List VII. Am Ind Hyg Assoc J 30:470-476. *Carnegie-Mellon University, Pittsburgh, PA* Smyth HF Jr., Carpenter CP., Weil CS., Pozzani, UC., and Striegel, JA. 1962. Range-finding toxicity data: List VI. Am Ind Hyg Assoc J 23:95-107. *Mellon Institute of Industrial Research, Pittsburg, PA* (experimental parameters)
Acetonitrile	2460	6500	NA	Thompson (1947) and Weil (1952); moving average tables	Manor farms Wistar; 150-200 g	male	oral; stomach intubation	single dose; geometric factor between dosage levels = 2; undiluted	14 day observation	5 rats per dosage level; fasted overnight	NA	Weil CS, Wright GJ. 1967. Intra- and Interlaboratory Comparative Evaluation of Single Oral Test. Toxicology and Applied Pharmacology 11:378-388. *Mellon Institute, Pittsburgh, PA and The Dow Chemical Company, Midland, MI*
Acetonitrile	2460	6687 (8.53 mL/kg; sp. density = 0.7839; convert LD50 to mg/kg)	4797 - 9328 (6.12 - 11.9 mL/kg; sp. density = 0.7839; convert LD50 to mg/kg)	NA	Carworth Farms Wistar or Nelson albino rats; 90-114 g	female	oral gastric intubation	undiluted cmpd; single dose	NA	non-fasted	Union Carbide Chemicals Company	Pozzani UC, Carpenter CP, Palm PE, Weil CS, Nair JH. 1959. An investigation of the mammalian toxicity of acetonitrile. J Occup Med 1: 634-642. *Mellon Institute, Pittsburgh, PA*
Acetonitrile	2460	8120	NA	Thompson (1947) and Weil (1952); moving average tables	Manor farms Wistar rats; 150-200 g	male	oral; stomach intubation	single dose; geometric factor between dosage levels = 2; undiluted	14 day observation	5 rats per dosage level; fasted overnight	NA	Weil CS, Wright GJ. 1967. Intra- and Interlaboratory Comparative Evaluation of Single Oral Test. Toxicology and Applied Pharmacology 11:378-388. *Mellon Institute, Pittsburgh, PA and The Dow Chemical Company, Midland, MI*
Acetylsalicylic acid	200	200	NA	NA	NA	NA	NA	NA	NA	RTECS reference for 200 mg/kg (from Deichman 1969) is a typo; this is a secondary reference which cites Caldwell and Boyd 1966; the value should be 920 mg/kg.	NA	**RTECS REFERENCE** *CODEN: 34ZIAG Bibliographic Data: "Toxicology of Drugs and Chemicals," Deichmann, W.B., New York, Academic Press, Inc., 1969 CODEN Reference: -,67,1969.*
Acetylsalicylic acid	200	616	+/- 46 (S.E.)	Miller and Tainter (1944)	FDRL-strain rats; 100 days	female	oral	NA	observed for 7 days post-treatment	NA	NA	Weinberg MS, Goldhamer RE, Carson S. 1966. Acute oral toxicity of various drugs in newborn rats after treatment of the dam during gestation. Toxic Appl Pharmac 9:234-239. *Food and Drug Research Laboratories, Inc., Maspeth, NY*

CHEMICAL[1]	LD50[2] mg/kg oral rat RTECS 2002	LD50[3] mg/kg oral rat Primary Reference	LD50[4] mg/kg (range) Primary Reference	LD50 CALCULATION METHOD[5] Primary Reference	ANIMAL INFORMATION (stock, weight, age)	GENDER	ROUTE/ METHOD OF EXPOSURE[6]	DOSE	OBSERVATIONS	NOTES	CHEMICAL SOURCE	PRIMARY REFERENCE
Acetylsalicylic acid	200	920	+/- 43 (S.E.)	Croxton (1953) and Waugh (1952)	Wistar albino rats; 213 +/- 16 g; 3-5 months	female	oral; stomach tube	single dose; suspension of cmpd in 0.2% gum tragcanth solution in distilled water; 15 mL/kg dose; dose (mg/kg), rats per dose: 0-14; 750-10; 875-10; 1000-10; 1125-10; 1250-2; 1500-2; 2000-2	within 1 hour of dosing rats were drowsy, withdrawn, hearing and vision impared, confused, tense, liquid stool, nasal bleeding, convulsionsrespiratory failure, cardiovascular shock	fasted overnight (16 hour); 60 rats used; 26/46 rats dead from compound	USP grade	Boyd EM. 1959. The acute oral toxicity of acetylsalicylic acid. Toxic Appl Pharmac 1: 229-239. *Queen's University, Ontario, Canada*
Acetylsalicylic acid	200	1360	NA	Reed and Muench (1938)	Wistar albino rats	male and female (75% male)	oral; stomach tube	single dose; solution in 2% acaia in physiological saline; volume of dose is 10 mL/kg	observed for one week; more than 80% of fatalities occurred within 48 hour	182 rats used; fasted for 18 hour	G.D. Searle and Co.	Eagle E, Carlson AJ. 1950. Toxicity, antipyretic and analgesic studies on 39 compounds including aspirin, phenacetin and 27 derivatives of carbazole and tetrahydrocarbazole. J Pharm Exp Ther 99:450-457. *University of Chicago, Chicago, IL*
Acetylsalicylic acid	200	1430	1065 - 1921 (95% CL)	Litchfield and Wilcoxon method (1949)	HLA strain albino rats; 95-180 g (mean wt. 122 g)	male	oral intubation	10-20 mL/kg in 10% gum acacia suspension; 4 doses	toxic effects included neurological abnormality; this LD50 at 168 hour (7days); observed at 96 with same result; observed at 24 & 48 hour with higher LD50	rats fasted 15-17 hours before dosing and for 6 hours after intubation; 40 rats used (10/dose)	NA	Boxill GC, Nash CB, Wheeler AG. 1958. Comparative pharmacological and toxicological evaluation of N-acetyl-p-aminophenol, salicylamide, and acetylsalicylic acid. J Am Pharm Assoc 47:479-487.
Acetylsalicylic acid	200	1430	1065 - 1921 (95% CL)	Litchfield and Wilcoxon method (1949)	HLA strain albino rats; 95-180 g (mean wt. 122 g)	male	oral intubation	10-20 mL/kg in 10% gum acacia suspension; 4 doses	toxic effects included neurological abnormality; this LD50 at 96 hour (same as 158 hour); observed at 24 & 48 hour with higher LD50	rats fasted 15-17 hours before dosing and for 6 hours after intubation; 40 rats used (10/dose)		Boxill GC, Nash CB, Wheeler AG. 1958. Comparative pharmacological and toxicological evaluation of N-acetyl-p-aminophenol, salicylamide, and acetylsalicylic acid. J Am Pharm Assoc 47:479-487.
Acetylsalicylic acid	200	1459 (value converted from mM/kg to mg/kg)	1009 - 2108 (95% CL)	Weil (1952)	Homozygous Gunn rat (Gunn strain bred from mutant Wistar stock); 137-230 g	male	oral; gastric lavage	single dose; solution in 0.5 - 1.0% (w/v) aqueous methyl cellulose; 10 mL/kg dose vol.; low dose (mg/kg): 176.6, 281.1, 450.4, 720.7, 1153.1; high dose (mg/kg): 450.4, 720.7, 1153.1, 1844.9, 2951.2	low dose experiment observed for 3 days; high dose observed for 7 days; LD50 determined at 7 days; dose (mg/kg), rats dead per dose: 176.6-0/6; 281.1-0/6; 450.4-0/12; 720.7-1/12; 1153.1-1/12; 1844.9-5/6; 2951.2-5/6	fasted overnight (16 hour); 6 rats per dose; 60 rats used	NA	Axelsen RA. 1976. Analgesic-induced renal papillary necrosis in the Gunn rat: the comparative nephrotoxicity of aspirin and phenacetin. J Path 120:145-150. *University of Queensland, Queensland, Australia*
Acetylsalicylic acid	200	1500	NA	determined graphically	rats	NA	oral; stomach tube	aqueous with gum ragacanth (cmpd at 5 - 10% concen)	rats dead within 48 hours considered for determination of LD50	15 rats used	NA	Hart ER. 1947. The toxicity and analgetic potency of salicylamide and certain of its derivatives as compared with established analgetic-antipyretic drugs. J Pharmacol Exp Ther 89:205-209. *Jefferson Medical College, Philadelphia, PA*
Acetylsalicylic acid	200	1500	NA	Litchfield and Wilcoxon	Wistar rats; 130-150 g	male and female	stomach tube	5 mL/kg bw in 1% carboxymethylcellulose	observed 3 weeks	Fasted 18 hour before dosing	NA	**RTECS REFERENCE** Kammerer F-J, Schleyerbach R. 1987. U.S. Patent 4,636,513. Isoxazole derivatives and medicaments containing these compounds (January 13, 1987).
Acetylsalicylic acid	200	1523	NA	NA	Upjohn Sprague-Dawley strain albino rats; ~140 g; young	male	oral	single dose; cmpd suspended in 1% aqueous carboxymethylcellulose; 13 dose groups from 400 - 2500 mg/kg	observed for 7 days post-treatment; most deaths occurred during the first day; frequently, animals observed in convulsions prior to death	fasted overnight (12+ hour); 5 rats per dose; 65 rats used	NA	Gray JE, Jones PM, Feeenstra ES. 1960. Comparative effect of acetylsalicylic acid and acetylsalicylic acid anhydride on the non-glandular portion of the stomach. Toxic Appl Pharmac 2:514-522. *The Upjohn Company, Kalamazoo, MI*
Acetylsalicylic acid	200	1528	+/- 156 (S.E.)	Miller and Tainter (1944)	Charles River CD and Sprague-Dawley rat strains; > 100 g	NA	oral intubation	dose up to 50 mL/kg	rats observed for 7 days; observed up to 14 days when heavy metals or other compounds that produce latent death were investigated	fasted overnight	NA	Yeary RA, Benish RA, Finkelstein M. 1966. Acute Toxicity of Drugs in Newborn Animals. Journal of Pediatrics. 69 (4):663-667. *Dept. of Veterinary Preventive Medicine, Ohio State University, Columbus, OH*
Acetylsalicylic acid	200	1600	1194 - 2144 (95% CL)	Litchfield and Wilcoxon method (1949)	HLA strain albino rats; 95-180 g (mean wt. 122 g)	male	oral intubation	10-20 mL/kg in 10% gum acacia suspension; 4 doses	toxic effects included neurological abnormality; this LD50 at 24 hour (same as 48 hour); observed at 96 & 168 hour with lower LD50	rats fasted 15-17 hours before dosing and for 6 hours after intubation; 40 rats used (10/dose)	NA	Boxill GC, Nash CB, Wheeler AG. 1958. Comparative pharmacological and toxicological evaluation of N-acetyl-p-aminophenol, salicylamide, and acetylsalicylic acid. J Am Pharm Assoc 47:479-487.
Acetylsalicylic acid	200	1600	1194 - 2144 (95% CL)	Litchfield and Wilcoxon method (1949)	HLA strain albino rats; 95-180 g (mean wt. 122 g)	male	oral intubation	10-20 mL/kg in 10% gum acacia suspension; 4 doses	toxic effects included neurological abnormality; this LD50 at 48 hour (same as 24 hour); observed at 96 & 168 hour with lower LD50	rats fasted 15-16 hours before dosing and for 6 hours after intubation; 10 rats used	NA	Boxill GC, Nash CB, Wheeler AG. 1958. Comparative pharmacological and toxicological evaluation of N-acetyl-p-aminophenol, salicylamide, and acetylsalicylic acid. J Am Pharm Assoc 47:479-487.
Acetylsalicylic acid	200	1761	+/- 162 (S.E.)	Miller and Tainter (1944)	FDRL-strain rats; 100 days	male	oral	NA	observed for 7 days post-treatment	NA	NA	Weinberg MS, Goldhamer RE, Carson S. 1966. Acute oral toxicity of various drugs in newborn rats after treatment of the dam during gestation. Toxic Appl Pharmac 9:234-239. *Food and Drug Research Laboratories, Inc., Maspeth, NY*
Acetylsalicylic acid	200	1880	1528 - 2312 (95% CL; slope = 1.27)	Litchfield and Wilcoxon method (1949)	Wistar SPF rats; 150-200 g	female	oral	cmpd suspended in a solution of 10% gum arabic in distilled water	observed for 7 days post-treatment	10 animals per dose	NA	Zapatero J, Sanfeliu C, Bruseghini L. 1981. Toxicological studies of Plafibride Part 1: Acute toxicity and its determination after several administrations of plafibride. Arsneim Forsch 31:1816-1819. *Chemical Pharmaceutical Research Centre, Barcelona, Spain*
Acetylsalicylic acid	200	1960	1441 - 2666 (95% CL; slope = 1.64)	Litchfield and Wilcoxon method (1949)	Wistar SPF rats; 150-200 g;	male	oral	cmpd suspended in a solution of 10% gum arabic in distilled water	observed for 7 days	10 animals per dose	NA	Zapatero J, Sanfeliu C, Bruseghini L. 1981. Toxicological studies of Plafibride Part 1: Acute toxicity and its determination after several administrations of plafibride. Arsneim Forsch 31:1816-1819. *Chemical Pharmaceutical Research Centre, Barcelona, Spain*
Acetylsalicylic acid	200	1992	1692 - 2345 (95% CL; slope = 1.45)	Litchfield and Wilcoxon method (1949)	Wistar SPF rats; 150-200 g;	male and female	oral	cmpd suspended in a solution of 10% gum arabic in distilled water	observed for 7 days post-treatment	10 animals per dose	NA	Zapatero J, Sanfeliu C, Bruseghini L. 1981. Toxicological studies of Plafibride Part 1: Acute toxicity and its determination after several administrations of plafibride. Arsneim Forsch 31:1816-1819. *Chemical Pharmaceutical Research Centre, Barcelona, Spain*

CHEMICAL[1]	LD50[2] mg/kg oral rat RTECS 2002	LD50[3] mg/kg oral rat Primary Reference	LD50[4] mg/kg (range) Primary Reference	LD50 CALCULATION METHOD[5] Primary Reference	ANIMAL INFORMATION (stock, weight, age)	GENDER	ROUTE/ METHOD OF EXPOSURE[6]	DOSE	OBSERVATIONS	NOTES	CHEMICAL SOURCE	PRIMARY REFERENCE
Acetylsalicylic acid	200	> 2000		Litchfield and Wilcoxon method (1949)	Sprague-Dawley SPF rats (Charles River, France); 100-110 g	male	oral	suspended in 0.25% carboxymethylcellulose with 0.2% polysorbate 80; doses in geometrical progression	observed for 7 days post-treatment; rats presented no signs	10 animals per dose; fasted 6 h prior to dosing	NA	Glomot R, Chevalier B, Vannier B. 1976. Toxicological studies on floctafenine. Toxicol Appl Pharmac 36:173-185.
Acetylsalicylic acid	200	> 2000		Litchfield and Wilcoxon method (1949)	Sprague-Dawley SPF rats (Charles River, France); 100-110 g	female	oral	suspended in 0.25% carboxymethylcellulose with 0.2% polysorbate 80; doses in geometrical progression	observed for 7 days post-treatment; rats presented no signs	10 animals per dose; fasted 6 h prior to dosing	NA	Glomot R, Chevalier B, Vannier B. 1976. Toxicological studies on floctafenine. Toxicol Appl Pharmac 36:173-185.
Acetylsalicylic acid	200	2840	2075 - 3890 (95% CL)	Litchfield and Wilcoxon method (1949)	Sprague-Dawley CD strain albino rats	male	oral; gavage	single dose; 5 mL/kg dose; min. of 3 dose levels; cmpd suspended in solution of 1% gum acacia vehicle	observed for 7 days post-treatment; LD50 based on number of deaths at 7 days	20 animals per dose level; 60 animals used; not fasted	Aldrich Chemical Company	Sofia RD. 1977. Alteration of hepatic microsomal enzyme systems and the lethal action of non-steroidal anti-arthritic drugs in acute and chronic models of inflammation. Agents and Actions 7: 289-297. *Wallace Laboratories, Cranbury, NJ*
Aminopterin	no rat oral data from RTECS	7	NA	Maximum likelihood estimation using log probit model (BMDS by US EPA)	Wistar albino rats; 100-200 g	male and female	oral	used measured samples neutralized before drying or added 2 molar eq NaHCO3 to weighed amounts of free acid; in 09% NaCl at 1 mL/100 g bw	observed for 14 days; deaths delayed until 3rd day; moderate weight loss by 1st day; intoxicated animals lost 20% by 3rd day; severe, watery diarrhea after 48 hour; yellowish brown feces, terminally, grossly stained with blood; deaths/dose: 40 mg/kg-5/6 (3 at 3-4 days, 2 at 5-7 days), 20 mg/kg-5/6 (2 at 3-4 days, 2 at 5-7 days, 1 at 8-14 days), 10 mg/kg-4/6 (3 at 3-4 days, 1 at 5-7 days); 5 mg/kg-2/6 (1 at 3-4 days, 1 at 8-14 days), 2.5 mg/kg-2/6 (2 at 3-4 days), 1.25 mg/kg-0/6	LD50 calculated by NICEATM; 36 rats used	ampuled and bulk samples from Lederle Laboraotries	Philips FS, Thiersch JB. 1949. Studies of the actions of 4-amino-pteroylglutamic acid in rats and mice. J Pharmacol Exp Ther 95:303-311.
Amitriptyline	320	320	286 - 359	Litchfield and Wilcoxon method (1949)	rats	NA	oral	NA	lethality counted after 7 days	40-50 rats used; reference in German	NA	**RTECS REFERENCE-GERMAN** *CODEN: ARZNAD Bibliographic Data: Arzneimittel-Forschung. Drug Research. (Editio Cantor Verlag. Postfach 1255, W-7960 Aulendorf, Fed. Rep. Ger.) V.1- 1951- CODEN Reference: 15,863,1965.* ------- Ribbentrop VA, Schaumann W. 1965. Pharmakologische Untersuchungen mit Doxepin, einem Antidepressivum mit zentral anticholinerger und sedierender Wirkung. Arzneimittel-Forschung 15:863-868. *Aus den Pharmakologischen Laboratorien der Firma C.F. Boehringer & Soehne Gmbh, Mannheim, Germany*
Amitriptyline	320	380	300 - 486 (95% CL)	Litchfield and Wilcoxon method (1949)	Wistar strain rats; 200 -300 g	male	oral	NA	72 hour observations	8 rats per group used; hydrochloride salt	NA	Tobe A, Yoshida Y, Ikoma H, Tonomura S, Kikumoto R. 1981. Pharmacological evaluation of 2-(4-methylaminobutoxy)diphenylmethane hydrochloride (MCI-2016), a new psychotropic drug with antidepressant activity. Arzneimittelforschung 31(8):1278-85.
Arsenic III trioxide	14.6	13	NA	NA	rats		oral; stomach tube	NA	violent gastroenteritis, diarrhea, rice water stools	information from the laboratories of Division of Pharmacology, U.S. FDA.; fasted animals	NA	Lehman AJ. 1951. Chemicals in Foods: a report to the association of food and drug officials on current developments. Part II. Pesticides. Quarterly Bulletine (Association of Food and Drug Officials of the United States). Vol.15:122-133. *U.S. FDA*
Arsenic III trioxide	14.6	14.6	NA	NA	rats	male	oral	NA	no clinical picture given	reference is in Russian; not translated	NA	**RTECS REFERENCE** *CODEN: GISAAA Bibliographic Data: Gigiena i Sanitariya. For English translation, see HYSAAV. (V/O Mezhdunarodnaya Kniga, 113095 Moscow, USSR) V.1-1936- CODEN Reference: 52(1),21,1987.*----- Tulakino NV, Novikov JV. 1987. On the question of reglameutation of arsenic in drinking water of different hardness. Gigiena i Sanitariya. 52 (1):21-24
Arsenic III trioxide	14.6	19.9 (15.1 mg As/kg)	+/- 2.4 (reported as +/- 1.8 mg As/kg)	de Beer (1945)	Sprague-Dawley Albino rats; 125 - 200 g	male	oral; intra-esophageally	pure arsenic trioxide dissolved in distilled water; 0.03 mL per g of bw; max volume 8 mL; dose range 10 - 50 mg As/kg	observed over 96 hours for LD50; experiment lasted 2 weeks; no significance between male or female; 95 dead at 24 hour; No of deaths/dose at 96 hour (male): 10 mg As/kg - 9/30; 20 mg As/kg - 20/30; 30 mg As/kg - 27/30; 40 mg As/kg - 28/30; 50 mg As/kg - 30/30	rats fasted 24 hour before dosing; 5 groups of 30 rats each (150 total); male and female rats tested; results and information given for male	99.999% pure	Harrison JWE, Packman EW, Abbott DD. 1958. Acute oral toxicity and chemical and physical properties of arsenic trioxides. AMA Arch ind Health, 17:118-123. *LaWall and Harrison Research Laboratories*
Arsenic III trioxide	14.6	32.6	28.4 - 36.7 (95% CI)	Finney (1971). Probit Analysis.	NA	male	intubated; single dose	dissolved in distilled water; administered by gavage in volume of 2mL/kg	rats dosed with one of 5 or 6 doses of chemical; deaths recorded daily for 7 days	animals acclimated to environment for 2 weeks before testing; used only healthy rats; all rats assigned to one of 5 to 6 groups of 8 to 10 rats each	Mallinckrodt	Pryor GT, Uyeno ET, et al. 1983. "Assessment of chemicals using a battery of neurobehavioral tests: a comparative study." Neurobehav Toxicol Teratol 5(1): 91-117. *SRI International, Menlo Park, CA; NIEHS, Research Triangle Park, NC*

CHEMICAL[1]	LD50[2] mg/kg oral rat RTECS 2002	LD50[3] mg/kg oral rat Primary Reference	LD50[4] mg/kg (range) Primary Reference	LD50 CALCULATION METHOD[5] Primary Reference	ANIMAL INFORMATION (stock, weight, age)	GENDER	ROUTE/ METHOD OF EXPOSURE[6]	DOSE	OBSERVATIONS	NOTES	CHEMICAL SOURCE	PRIMARY REFERENCE
Arsenic III trioxide	14.6	81.5	70.5 - 94.3	Bliss-Probit method	Sprague-Dawley rats; 5 weeks	male	oral gavage	dissolved in saline; range (mg/kg) of doses 51.2, 66.5, 86.5, 112.5, 146.2	rats observed at 6 hours after dosing and a once a day for 1 - 2 weeks; most rats found dead within 3 days; 27 of 50 rats died; toxic symptoms: vomiting and diarrhea; No of deaths/dose (mg As/kg) at 14 days: 51.2 mg - 0/10; 66.5 mg - 2/10; 86.5 mg - 6/10; 112.5 mg - 9/10; 146.2 mg - 10/10	animals acclimated to environment for 1 week before testing; 5 groups of10 rats each; fasted 16 hours before dosing; 100% lethal dose = 143.2 mg/kg; 0% lethal dose = 51.2 mg/kg	Kishida Chemical Co., Ltd.	Kitagawa H, Saito H, Sugimoto T, Yanaura S, Kitagawa H, Hosokawa T, Sakamoto K. 1982. Effects of diiospropyl-1,3-dithiol-2-ylidene malonate (NKK-105) on acute toxicity of various drugs and heavy metals. J Toxicol Sci 7(2):123-34. *Chiba University; Hoshi College of Pharmacy; Showa University -- Japan*
Arsenic III trioxide	14.6	138	+/- 13 (standard error)	Litchfield and Fetig (1941)	wild Norway rats (trapped in Baltimore, MD); 148-493 g (ave = 253 g), adult	male and female	oral gavage	chemical suspended in 10% acacia solution; received appropriate doses in 1mL per 100 g bw	rats survived from 6 - 72 hours	41 rats used (approx. equal number of male and female); overnight fasting before dosing; assays performed in winter, repeated in summer; LD50s from combined information; final LD50 higher than winter LD50; attributed to not having enough rats in winter.	Merck U.S.P.	Dieke SH, Richter CP. 1946. Comparative assays of rodenticides on wild Norway rats. I. Toxicity. Publ. Health Rep 61:672-679. *Johns Hopkins Hospital, Baltimore, MD*
Arsenic III trioxide	14.6	140	NA	statistical formula based on mortality rates	wild Norway rats	unknown	oral, stomach tube; single dose	a number of individual doses of a cmpd, each dose at a different conc level are given to an equal number of test animals	enteritis and neuritis	NA	NA	Peardon DL, Kilbourn E, et al. 1972. "New selective rodenticides." Soap Cosmet Chem Spec 48(12):6. *Rohm and Haas Company, Philadelphia, PA*
Arsenic III trioxide	14.6	191.8 (145.2 mg As/kg)	+/- 11.5 (reported as +/- 8.7 mg As/kg)	de Beer (1945)	Sprague-Dawley Albino rats; 125-200 g	male	oral	pure arsenic trioxide incorporated into 3 g rat Purina chow; rats consumed meal in 1 hour; dose range 301 - 338 mg As/kg	observed over 96 hours for LD50; experiment lasted 2 weeks; no significance between male or female; 76 dead at 24 hour; No of deaths/dose (mg As/kg) at 96 hour: 301 mg - 0/20; 91 mg - 2/20; 1281 mg - 6/20; 1809 mg -12/20; 2078 mg -18/20; 269 mg - 20/20; 338 mg - 20/20	rats fasted 24 hour before dosing; 7 groups of 20 rats each (140 total); male and female rats tested; results and information given for male	99.999% pure	Harrison JWE, Packman EW, Abbott DD. 1958. Acute oral toxicity and chemical and physical properties of arsenic trioxides. AMA Arch ind Health 17:118-123. *LaWall and Harrison Research Laboratories*
Arsenic III trioxide	14.6	385	350 - 424 (95% CL)	Litchfield and Wilcoxon method	Holtsman rats; 300 - 500 g; 100-300 days old (13 - 41 weeks)	male and female	oral; gelatin capsules	20, 50, 100, 250, 500, 750, 1000 (all in mg/kg)	rats dosed under light anesthesia; death occurred within 4 days	approximately 70 rats used; 24 hour fasting before dosing	Baker Analyzed Reagent with 0.02% impurities	Done AK and Peart AJ. 1971. Acute Toxicities of Arsenical Herbicides. Cinical Toxicology, 4(3):343 - 355. *University of Utah, Salt Lake City, UT*
Atropine sulfate	600	600	530 - 675	Litchfield and Wilcoxon method	rats	NA	oral	NA	NA	reference in German	NA	**RTECS REFERENCE-GERMAN** *CODEN: AIPTAK Bibliographic Data: Archives Internationales de Pharmacodynamie et de Therapie. (Heymans Institute of Pharmacology, De Pintelaan 185, B-9000Ghent, Belgium) V.4- 1898- CODEN Reference: 155,393,1965--* Wirth W, Gosswald R. 1965. Pharmakologische Untersuchungen in der Reihe der Diphenylcarbamidsaurethioester. Arch Int Pharmacodyn 155 (2):393 - 417.
Atropine sulfate	600	622	+/- 36	NA	Sprague-Dawley rats; from Charles River; adult	male	oral	NA	NA	information from: drug applications from pharmaceutical manufacturers, the literature, and FDA labs	NA	Goldenthal EI. 1971. A compilation of LD50 values in newborn and adult animals. Toxicology and Applied Pharamacology 18:185 -207. *Bureau of Drugs, Food and Drug Administration, Dept. of Health, Education, and Welfare, Rockville, MD.*
Atropine sulfate	600	698.7	629.2 - 776.0	Bliss-Probit method	Sprague-Dawley rats; 5 weeks	male	oral gavage	dissolved in saline; range (mg/kg) of doses 500, 625, 781, 977	rats observed at 6 hours after dosing and a once a day for 1 - 2 weeks; most rats dead within 3 days; 20 of 40 rats died; toxic symptoms: decrease of spontaneous movement, myasthenia and coma observed at 10 minutes; stretching of the limbs, abdominal posture, anaerosis and cardiac arrest after convulsions; dose (mg/kg), dead rats per dose: 500 -- 1/10; 625 -- 4/10; 781 -- 6/10; 977 -- 10/10	animals acclimated to environment for 1 week before testing; 4 groups of 10 rats each; fasted 16 hours before dosing; 100% lethal dose = 977 mg/kg; 0% lethal dose = 500 mg/kg	Tokyo Kasei Kogyo Co.	Kitagawa H, Saito H, Sugimoto T, Yanaura S, Kitagawa H, Hosokawa T, Sakamoto K. 1982. Effects of diiospropyl-1,3-dithiol-2-ylidene malonate (NKK-105) on acute toxicity of various drugs and heavy metals. J Toxicol Sci 7(2):123-34. *Chiba University; Hoshi College of Pharmacy; Showa University -- Japan*
Atropine sulfate	600	840	NA	Rosiello (1979) and Bliss (1938)	rats	male	oral	200, 400, 800, 1000, 1600 mg/kg	200 mg/kg: 0/3 dead; 400 mg/kg: 0/3 dead; 800 mg/kg: 1/3 dead; 1600 mg/kg: 3/3 dead; 4 of 12 rats dead; LD50 based on 12 rats used; LD50 recalculated using US EPA Benchmark Dose software; Lorke used data from 1000 mg/kg in range finder for all animal groups; omitted this data in recalculation; orginial LD50 from Lorke = 900 mg/kg	rats acclimated for 5 days; rats observed for 14 days; 4 groups of rats used for each dose (1, 2, 3, 5 rats per group; 11 rats per dose); 9 rats for initial range finding;10 mg/kg - 0/3 dead; 100 mg/kg - 0/3 dead; 1000 mg/kg - 2/3 dead	NA	Lorke D. 1983. A new approach to practical acute toxicity testing. Arch Toxicol 54(4):275-288. *Institut fur Toxikologie, Wuppertal, Federal Republic of Germany*

CHEMICAL[1]	LD50[2] mg/kg oral rat RTECS 2002	LD50[3] mg/kg oral rat Primary Reference	LD50[4] mg/kg (range) Primary Reference	LD50 CALCULATION METHOD[5] Primary Reference	ANIMAL INFORMATION (stock, weight, age)	GENDER	ROUTE/ METHOD OF EXPOSURE[6]	DOSE	OBSERVATIONS	NOTES	CHEMICAL SOURCE	PRIMARY REFERENCE
Atropine sulfate	600	874	NA	Rosiello (1979) and Bliss (1938)	rats	male	oral	200, 400, 800, 1000, 1600 mg/kg	200 mg/kg: 0/5 dead; 400 mg/kg: 0/5 dead; 800 mg/kg: 1/5 dead; 1600 mg/kg: 5/5 dead; 6 of 20 rats dead; LD50 based on 20 rats used; LD50 recalculated using US EPA Benchmark Dose software; Lorke used data from 1000 mg/kg in range finder for all animal groups; omitted this data in recalculation; orginial LD50 from Lorke = 950 mg/kg	rats acclimated for 5 days; rats observed for 14 days; 4 groups of rats used for each dose (1, 2, 3, 5 rats per group; 11 rats per dose); 9 rats for initial range finding;10 mg/kg - 0/3 dead; 100 mg/kg - 0/3 dead; 1000 mg/kg - 2/3 dead	NA	Lorke D. 1983. A new approach to practical acute toxicity testing. Arch Toxicol 54(4):275-288. *Institut fur Toxikologie, Wuppertal, Federal Republic of Germany*
Atropine sulfate	600	878	NA	Rosiello (1979) and Bliss (1938)	rats	male	oral	200, 400, 800, 1000, 1600 mg/kg	200 mg/kg: 0/11 dead; 400 mg/kg: 0/11 dead; 800 mg/kg: 2/11 dead; 1600 mg/kg: 11/11 dead; 13 of 44 rats dead; LD50 based on 44 rats used; LD50 recalculated using US EPA Benchmark Dose software; Lorke used data from 1000 mg/kg in range finder for all animal groups; omitted this data in recalculation; orginial LD50 from Lorke = 900 mg/kg	rats acclimated for 5 days; rats observed for 14 days; 4 groups of rats used for each dose (1, 2, 3, 5 rats per group; 11 rats per dose); 9 rats for initial range finding;10 mg/kg - 0/3 dead; 100 mg/kg - 0/3 dead; 1000 mg/kg - 2/3 dead	NA	Lorke D. 1983. A new approach to practical acute toxicity testing. Arch Toxicol 54(4):275-288. *Institut fur Toxikologie, Wuppertal, Federal Republic of Germany*
Atropine sulfate	600	1135	NA	Rosiello (1979) and Bliss (1938)	rats	male	oral	200, 400, 800, 1000, 1600 mg/kg	200 mg/kg: 0/1 dead; 400 mg/kg: 0/1 dead; 800 mg/kg: 0/1 dead; 1600 mg/kg: 1/1 dead; 1 of 4 rats dead; LD50 based on 4 rats used; LD50 recalculated using US EPA Benchmark Dose software; Lorke used data from 1000 mg/kg in range finder for all animal groups; omitted this data in recalculation; orginial LD50 from Lorke = 950 mg/kg	rats acclimated for 5 days; rats observed for 14 days; 4 groups of rats used for each dose (1, 2, 3, 5 rats per group; 11 rats per dose); 9 rats for initial range finding;10 mg/kg - 0/3 dead; 100 mg/kg - 0/3 dead; 1000 mg/kg - 2/3 dead	NA	Lorke D. 1983. A new approach to practical acute toxicity testing. Arch Toxicol 54(4):275-288. *Institut fur Toxikologie, Wuppertal, Federal Republic of Germany*
Atropine sulfate	600	1136	NA	Rosiello (1979) and Bliss (1938)	rats	male	oral	200, 400, 800, 1000, 1600 mg/kg	200 mg/kg: 0/2 dead; 400 mg/kg: 0/2 dead; 800 mg/kg: 0/2 dead; 1600 mg/kg: 2/2 dead; 2 of 8 rats dead; LD50 based on 8 rats used; LD50 recalculated using US EPA Benchmark Dose software; Lorke used data from 1000 mg/kg in range finder for all animal groups; omitted this data in recalculation; orginial LD50 from Lorke = 950 mg/kg	rats acclimated for 5 days; rats observed for 14 days; 4 groups of rats used for each dose (1, 2, 3, 5 rats per group; 11 rats per dose); 9 rats for initial range finding;10 mg/kg - 0/3 dead; 100 mg/kg - 0/3 dead; 1000 mg/kg - 2/3 dead	NA	Lorke D. 1983. A new approach to practical acute toxicity testing. Arch Toxicol 54(4):275-288. *Institut fur Toxikologie, Wuppertal, Federal Republic of Germany*
Boric acid	2662	2660	+/- 220 (S.E.; slope = 7.7)	Litchfield and Fetig (1941)	rats	NA	oral	NA	NA	45 rats used	NA	**RTECS REFERENCE** *CODEN: JAMAAP Bibliographic Data: JAMA, Journal of the American Medical Association. (AMA, 535 N. Dearborn St., Chicago, IL 60610) V.1- 1883- CODEN Reference: 128,266,1945.* ---- Pfeiffer CC, Hallman LF, Gersh IG. 1945. Boric Acid Ointment. A study of possible intoxication in the treatment of burns. Journal of the American Medical Association 128:266 - 274. *National Naval Medical Center, Bethesda, MD*
Boric acid	2662	2660	+/- 200 (S.E.)	NA	rats; 220 +/- 40 g		oral; intragastric	NA	NA	(source of information not provided); reference in Russian;	NA	Izmerov NF, Sanotsky IV, Sidorov KK. 1982. Toxicometric Parameters of Industrial Toxic Chemicals under Single Exposure. International Register of Potentially Toxic Chemicals (IRPTC). United Nations Environment Programme (UNEP). Centre of International Projects, GKNT. Moscow, Russia.
Boric acid	2662	3160 (estimate)	NA	NA	Long Evans rats from Diablo Laboratories; 85-118 g	male	oral; stomach intubation	50% w/v in distilled water suspension	observed for 14 days; signs included depression, ataxia, convulsion and death	fasted rats; 6 groups of 5 rats each; total of 30 rats	NA	Weir RJ Jr, Fisher RS. 1972. Toxicologic studies on borax and boric acid. Toxicol Appl Pharmac 23:351-364.
Boric acid	2662	3450	2950-4040 (CL)	NA	Albino Sprague-Dawley rats (Charles River SPF); 267-310 g	male	oral; stomach intubation	50% w/v in 0.5% aqueous methylcellulose suspension	observed for 14 days; signs included depression, ataxia, convulsion and death	fasted rats; 6 groups of 5 rats each; total of 30 rats	NA	Weir RJ Jr, Fisher RS. 1972. Toxicologic studies on borax and boric acid. Toxicol Appl Pharmac 23:351-364.
Boric acid	2662	4080	3640-4560 (CL)	NA	Albino Sprague-Dawley rats (Charles River SPF); 206-248 g	female	oral; stomach intubation	50% w/v in 0.5% aqueous methylcellulose suspension	observed for 14 days; signs included depression, ataxia, convulsion and death	fasted rats; 6 groups of 5 rats each; total of 30 rats	NA	Weir RJ Jr, Fisher RS. 1972. Toxicologic studies on borax and boric acid. Toxicol Appl Pharmac 23:351-364.
Boric acid	2662	5140	4750 - 5580 (range is +/- 1.96 S.D.)	Thompson method; Weil tables	Carworth-Wistar rats; 90-120 g; 4-5 weeks	male	oral gastric intubation	in aqueous solution; concentration intubated = 200 mg/mL; dosages arranged in a logarithmic series differing by a factor of 2	LD50 based on mortalities during a 14 day period	non-fasted; groups of 5 rats; single oral dose toxicity	reagent grade	Smyth HF Jr, Carpenter CP, Weil CS, Pozzani UC, Striegel JA, Nycum, JS. 1969. Range-finding toxicity data: List VII. Am Ind Hyg Assoc J 30: 470-476. *Carnegie-Mellon University, Pittsburgh, PA* (LD50 value) ---------- Smyth HF Jr, Carpenter CP, Weil CS, Pozzani UC, Striegel JA. 1962. Range-finding toxicity data: List VI. Am Ind Hyg Assoc J 23:95-107. *Mellon Institute of Industrial Research, Pittsburg, PA* (experimental parameters)

CHEMICAL[1]	LD50[2] mg/kg oral rat RTECS 2002	LD50[3] mg/kg oral rat Primary Reference	LD50[4] mg/kg (range) Primary Reference	LD50 CALCULATION METHOD[5] Primary Reference	ANIMAL INFORMATION (stock, weight, age)	GENDER	ROUTE/ METHOD OF EXPOSURE[6]	DOSE	OBSERVATIONS	NOTES	CHEMICAL SOURCE	PRIMARY REFERENCE
Busufan	110 (mouse) no rat oral data from RTECS	2	NA	NA	NA	NA	NA	NA	NA	Value used by RC from 1983/84 RTECS. No rat oral LD50 in current RTECS. This study treated rats with 0.13 mg/kg busulfan, which was 7% LD50. LD50 = 1.9 mg/kg	NA	Schmahl D, Osswald H. 1970. Experimental studies on the carcinogenic effects of anticancer chemotherapeutics and immunosuppressive agents. Arzneimittelforschung. Oct;20(10):1461-1467.
Busufan	110 (mouse) no rat oral data from RTECS	14	6 (SE)	probit method Finney (1962)	JO13 strain rats; 170-250 g; 10-12 weeks	male and female	oral	as aqueous emulsion with tragacanth powder	30 day observation	fasted rats; rats from CEN Breeding Centre Mol, Belgium from former L strain of Institute of Cancer	NA	Dunjic A, Cuvelier A-M. 1973. Survival of rat bone marrow cells after treatment with Myleran and Endoxan. Experimental Hematology 1:11-21.
Busufan	110 (mouse) no rat oral data from RTECS	28	21 - 38 (95% CL)	NA	Sprague-Dawley strain rats	male	oral	doses (mg/kg): 20, 30, 40, 50, 100, 150, 200	observed for 14 days; doses (mg/kg, deaths at 14 days: 20 -- 1/5; 30 -- 2/5; 40, 50, 100, 150, and 200 -- 5/5	5 rats per dose; 35 rats used	NA	**RTECS REFERENCE-MOUSE ORAL** *Kiso to Rinsho. Clinical Report. 1971. (Yubunsha Co., Ltd., 1-5, Kanda Suda-Cho, Chiyoda-ku, KS Bldg., Tokyo 101, Japan. 5(12): 1894.*
Busufan	110 (mouse) no rat oral data from RTECS	29	23 - 38 (95% CL)	NA	Sprague-Dawley strain rats	female	oral	doses (mg/kg): 10, 30, 40, 50, 100, 150, 200	observed for 14 days; doses (mg/kg, deaths at 14 days: 10 -- 1/5; 30 -- 2/5; 40 -- 4/5; 50, 100, 150, and 200 -- 5/5	5 rats per dose; 35 rats used	NA	**RTECS REFERENCE-MOUSE ORAL** *Kiso to Rinsho. Clinical Report. 1971. (Yubunsha Co., Ltd., 1-5, Kanda Suda-Cho, Chiyoda-ku, KS Bldg., Tokyo 101, Japan. 5(12): 1894.*
Cadmium II chloride	88	47	43 - 51 (95% CL)	Thompson and Weil (1952); method of moving averages	albino rats; 2 weeks	male and female	oral; stomach tube	1 mL/200 g bw	observed after 8 days after single oral administration	6 dose levels per group, 6 rats per group; 36 rats used	NA	Kostial K, Kello D, Jugo S, Rabar I, Maljkovic T. 1978. Influence of age on metal metabolism and toxicity. Environ Health Perspect 25:81-86. *Yugoslav Academy of Sciences and Art, Zagreb, Yugoslavia*
Cadmium II chloride	88	88	NA	NA	rats	NA	oral; stomach tube	NA	salivation, vomiting, diarrhea; onset within 30 minutes	information from the laboratories of Division of Pharmacology, U.S. FDA.; fasted animals	NA	**RTECS REFERENCE** *CODEN: AFDOAQ Bibliographic Data: Quarterly Bulletin--Association of Food and Drug Officials of the United States. (Denver, CO) V.3-38, 1939-74. CODEN Reference: 15,122,1951 ----* Lehman AJ. 1951. Chemicals in Foods: a report to the association of food and drug officials on current developments. Part II. Pesticides. Quarterly Bulletine (Association of Food and Drug Officials of the United States). Vol. 15:122 - 133. *U.S. Food and Drug Administration*
Cadmium II chloride	88	109	86 - 136 (95% CL)	Thompson and Weil (1952); method of moving averages	albino rats; 54 weeks	female	oral; stomach tube	1 mL/200g bw	observed after 8 days after single oral administration	6 dose levels per group, 6 rats per group; 36 rats used;	NA	Kostial K, Kello D, Jugo S, Rabar I, Maljkovic T. 1978. Influence of age on metal metabolism and toxicity. Environ Health Perspect 25:81-86. *Yugoslav Academy of Sciences and Art, Zagreb, Yugoslavia*
Cadmium II chloride	88	132	109.4 - 159.3 (95% CL)	Bliss-Probit method	Sprague-Dawley rats; 5 weeks	male	oral gavage	dissolved in saline; range (mg/kg) of doses 66.5, 86.5, 112.5, 146.2, 190.1, 247.1	rats observed at 6 hours after dosing and a once a day for 1 - 2 weeks; most rats found dead within 3 days; 29 of 60 rats died; toxic symptoms: drooling, diarrhea, nasal bleeding; dose (mg/kg), rats dead per dose: 66.5 -- 0/10; 86.5 -- 1/10; 112.5 -- 3/10; 146.2 -- 6/10; 190.1 -- 9/10; 247.1 -- 10/10	animals acclimated to environment for 1 week before testing; 6 groups of10 rats each; fasted 16 hours before dosing; 100% lethal dose = 247.1 mg/kg; 0% lethal dose = 66.5 mg/kg	MITSUWA Chemical Co., Ltd.	Kitagawa H, Saito H, Sugimoto T, Yanaura S, Kitagawa H, Hosokawa T, Sakamoto K. 1982. Effects of diiospropyl-1,3-dithiol-2-ylidene malonate (NKK-105) on acute toxicity of various drugs and heavy metals. J Toxicol Sci 7(2):123-34. *Chiba University; Hoshi College of Pharmacy; Showa University -- Japan*
Cadmium II chloride	88	170	140 - 206 (95% CL)	Thompson and Weil (1952); method of moving averages	albino rats; 18 weeks	female	oral; stomach tube	1 mL/200 g bw	observed after 8 days after single oral administration	6 dose levels per group, 6 rats per group; 36 rats used	NA	Kostial K, Kello D, Jugo S, Rabar I, Maljkovic T. 1978. Influence of age on metal metabolism and toxicity. Environ Health Perspect 25:81-86. *Yugoslav Academy of Sciences and Art, Zagreb, Yugoslavia*
Cadmium II chloride	88	211	182 - 252 (95% CL)	Thompson and Weil (1952); method of moving averages	albino rats; 6 weeks	female	oral; stomach tube	1 mL/200 g bw; 6 dose levels in each group	observed after 8 days after single oral administration	6 dose levels per group, 6 rats per group; 36 rats used	NA	Kostial K, Kello D, Jugo S, Rabar I, Maljkovic, T. 1978. Influence of age on metal metabolism and toxicity. Environ Health Perspect 25:81-86. Yugoslav Academy of Sciences and Art, Zagreb, Yugoslavia
Cadmium II chloride	88	240	198 - 291 (95% CL)	Thompson and Weil; 1952; method of moving averages	albino rats; 3 weeks	male and female	oral; stomach tube	1 mL/200 g bw; 6 dose levels in each group	observed after 8 days after single oral administration	6 dose levels per group, 6 rats per group; 36 rats used	NA	Kostial K, Kello D, Jugo S, Rabar I, Maljkovic, T. 1978. Influence of age on metal metabolism and toxicity. Environ Health Perspect 25:81-86. *Yugoslav Academy of Sciences and Art, Zagreb, Yugoslavia*
Caffeine	192	192	+/- 18 (S.E.)	NA	albino rats	NA	oral	NA	NA	see Boyd 1959	NA	**RTECS REFERENCE** *CODEN: JNDRAK Bibliographic Data: Journal of New Drugs. (Albany, NY) V.1-6, 1961-66. For publisher information, see JCPCBR. CODEN Reference: 5,252,1965. ----* Boyd EM. 1965. Caffeine addiction and drug toxicity. The Journal of New Drugs 5:252. (secondary reference) *Queen's University, Canada*

CHEMICAL[1]	LD50[2] mg/kg oral rat RTECS 2002	LD50[3] mg/kg oral rat Primary Reference	LD50[4] mg/kg (range) Primary Reference	LD50 CALCULATION METHOD[5] Primary Reference	ANIMAL INFORMATION (stock, weight, age)	GENDER	ROUTE/ METHOD OF EXPOSURE[6]	DOSE	OBSERVATIONS	NOTES	CHEMICAL SOURCE	PRIMARY REFERENCE
Caffeine	192	192	+/- 18 (S.E.)	NA	albino rats; 203 +/- 28 g; 3-6 months	female	oral; stomach tube	aqueous solution; 2 mL/kg dose; 0 mg/kg-20 rats; 160 mg/kg-8 rats; 180 mg/kg-16 rats; 200 mg/kg-8 rats; 220 mg/kg-8 rats	19 rats survived; 21 rats died; death time 300 +/- 96 hours after dosing; survivors: lack of curiosity, weak, tense, hyperreflexia, ataxic, cataleptic stances, swollen and inflammed eyelids,loose stools, tremors, anorexia, loss of body weight, fluctuation in body temperature; normal clinical appearance at 72 hours; dead rats: similar clinical signs as survivors, clinical deterioration progressive from 10th hour till death, didn't eat or drink, diarrhea, loss of body weight, anuric, drop in body temperature; two-thirds died of respiratory failure following tetanic convulsions; remainder died of cardiovascular collapse	fasted for 16 hours; 60 rats used	NA	Boyd EM. 1959. The acute oral toxicity of caffeine. Toxic Appl Pharmac 1: 250-257. *Queen's University, Ontario, Canada*
Caffeine	192	247	220 - 277 (95% CL; slope=7.7)	Cornfield and Mantel (1950)	Sprague-Dawley CD rats; mean wt. of 164 g; young adult	female	oral intubation	single dose	observed for 15 days; death usually 1-2 days after dosing; diarrhea, wt loss/gain; 40% of female rats died	15 rats per dose level; 16 hour fasting before dosing; 5 -6 dose levels; 75-90 rats	Schwarz/Mann - Becton Dickinson Co.	Palm PE, Arnold EP, Rachwall PC, Leyczech JC, Teague KW, Kensler CJ. 1978. Evaluation of the teratogenic potential of fresh brewed coffee and caffeine in the rat. Toxic Appl Pharmac 44:1 - 16. *Arthur D. Little, Inc., Cambridge, MA*
Caffeine	192	264	+/- 10 (S.E.)		CBL Wistar albino rats; 150 - 200 g	female	intragastric	single dose; range of 200 - 350 mg/kg; dissolved in distilled water; 20 mL/kg volume to each rat	observed for 5 days	no overnight fasting; 50 rats used; groups of 10 rats	Merck Reagent	Boyd EM, Dolman M, Knight LM, Sheppard EP. 1965. The chronic oral toxicity of caffeine. Canad J Physiol Pharm 43:995 - 1007. *Queen's University, Ontario, Canada*
Caffeine	192	279	259 - 302 (95% CI)	Probit analysis	Crl-CD rats; Charles River Breeding lab; 220 - 280 g; 60 days old	male	oral; intragastric intubation	0.5 - 3.9% suspension; dissolved/suspended in corn oil; single dose; 100, 200, 250, 300, 500 mg/kg doses	observed daily for 14 days; death within 2 days; toxic symptoms: staining of the face, wet perineal area, slight weight loss, lacrimation, lethargy, diarrhea	fasted 24 hours before dosing; 5 groups of 10; 50 rats used; 19 rats died	99+% pure; Aldrich Chemical Co.	Dashiell OL, Kennedy GL Jr. 1984. The effects of fasting on the acute oral toxicity of nine chemicals in the rat. J Appl Toxicol 4(6): 320-325. *E.I. Du Pont de Nemours & Co., Newark, DE*
Caffeine	192	288	+/- 6 (S.E.)	Linear regression. Boyd (1965)	Wistar albino rats; 125-200 g	male	oral; intragastric dosing	dissolved in distilled water; 20 mL/kg dose; 14 doses ranging from 162 to 354 mg/kg; each dose given to 6 - 10 rats	observations recorded hourly 1st day then at 24 hour intervals; ave time to death is 14 hours; 1 - 40 hours range; cause of early deaths: tonic-clonic convulsions followed by resipiratory failure; for delayed death, immediate cause was hypothermic coma and respiratory failure following loss of corneal reflexes, impaired respiration, pallor, cyanosis, anuria; drop in colonic temperature; hypothermia appeared within 2 hours, peaked at 8 - 24 hour at which time it was dose dependent; hypothermia associated with stupor, anorexia, oligodipsia, loss of body weight, oliguria, aciduria, proteinuria	fasted for 16 hours; 84 - 140 rats used; unanethetized rats	U.S.P. grade	Boyd EM, Liu SJ, Singh J. 1968. The toxicity of aspirin, phenacetin, and caffeine following rectal administration. Clin Toxicol 1:425 - 430. *Queen's University, Ontario, Canada*
Caffeine	192	300	+/- 29 (S.E.)	Linear regression. Boyd (1965)	Wistar albino rats; 125-200 g	male	oral; intragastric dosing	dissolved in distilled water; 20 mL/kg dose; 14 doses ranging from 162 to 354 mg/kg; each dose given to 6 - 10 rats	observations recorded hourly 1st day then at 24 hour intervals; ave time to death is 14 hours; 1 - 40 hours range; cause of early deaths: tonic-clonic convulsions followed by resipiratory failure; for delayed death, immediate cause was hypothermic coma and respiratory failure following loss of corneal reflexes, impaired respiration, pallor, cyanosis, anuria; drop in colonic temperature; hypothermia appeared within 2 hours, peaked at 8 - 24 hour at which time it was dose dependent; hypothermia associated with stupor, anorexia, oligodipsia, loss of body weight, oliguria, aciduria, proteinuria	fasted for 16 hours; 84 - 140 rats used; rats used; rats given thiopental before dosing (anesthetized rats before dosing)	U.S.P. grade	Boyd EM, Liu SJ, Singh J. 1968. The toxicity of aspirin, phenacetin, and caffeine following rectal administration. Clin Toxicol 1:425 - 430. *Queen's University, Ontario, Canada*
Caffeine	192	310	+/- 33	NA	rats; 220 +/- 40 g	NA	oral; intragastric	NA	NA	(source of information not provided)	NA	Izmerov NF, Sanotsky IV, Sidorov KK. 1982. Toxicometric Parameters of Industrial Toxic Chemicals under Single Exposure. International Register of Potentially Toxic Chemicals (IRPTC). United Nations Environment Programme (UNEP). Centre of International Projects, GKNT. Moscow, Russia.
Caffeine	192	344	307 - 383 (95% CI)	Probit analysis	Sprague-Dawley rats; 190-300 g	male	oral gavage	geometric progression of 14 for dosing	observed for 14 days after dosing;	fasted 18 - 20 hours before dosing; conventional LD50 method; groups of 10; 40 rats used	NA	Bruce RD. 1987. A confirmatory study of the up-and-down method for acute oral toxicity testing. Fundam Appl Toxicol 8(1): 97-100. *The Proctor and Gamble Co., Cincinnati, OH*
Caffeine	192	355	312 - 403 (95% CL; slope=5.1)	Cornfield and Mantel (1950)	Sprague Dawley CD rats; mean wt. of 210 g; young adult	male	oral intubation	single dose; dose in water	observed for 15 days; death usually 1-2 days after dosing; diarrhea, wt loss/gain; 21% of male mice died	15 rats per dose level; 16 hour fasting before dosing; 5 -6 dose levels; 75-90 rats	Schwarz/Mann - Becton Dickinson Co.	Palm PE, Arnold EP, Rachwall PC, Leyczech JC, Teague KW, Kensler CJ. 1978. Evaluation of the teratogenic potential of fresh brewed coffee and caffeine in the rat. Toxic Appl Pharmac 44:1 - 16. *Arthur D. Little, Inc., Cambridge, MA*

CHEMICAL[1]	LD50[2] mg/kg oral rat RTECS 2002	LD50[3] mg/kg oral rat Primary Reference	LD50[4] mg/kg (range) Primary Reference	LD50 CALCULATION METHOD[5] Primary Reference	ANIMAL INFORMATION (stock, weight, age)	GENDER	ROUTE/ METHOD OF EXPOSURE[6]	DOSE	OBSERVATIONS	NOTES	CHEMICAL SOURCE	PRIMARY REFERENCE
Caffeine	192	421	320 - 553 (95% CI)	Probit analysis	Sprague-Dawley rats; 190-300 g	male	oral gavage	NA	observed for 7 days	fasted 18 - 20 hours before dosing; Up-and-down LD50 method; 9 rats used	NA	Bruce RD. 1987. A confirmatory study of the up-and-down method for acute oral toxicity testing. Fundam Appl Toxicol 8(1): 97-100. *The Proctor and Gamble Co., Cincinnati, OH*
Caffeine	192	483	433 -562 (95% CI)	Probit analysis	Crl-CD rats; Charles River Breeding lab; 220 - 280 g; 60 days old	male	oral; intragastric intubation	0.5 - 3.9% suspens; dissolved or suspended in corn oil; single dose; 300, 400, 450, 650 mg/kg doses	observed daily for 14 days; death within 3 days; toxic symptoms: staining of the face, wet perineal area, slight weight loss, lacrimation, lethargy, diarrhea	non fasted; 4 groups of 10; 40 rats used; 15 rats died	99+% pure; Aldrich Chemical Co.	Dashiell OL, Kennedy GL Jr. 1984. The effects of fasting on the acute oral toxicity of nine chemicals in the rat. J Appl Toxicol 4(6): 320-325. *E.I. Du Pont de Nemours & Co., Newark, DE*
Carbamazepine	1957	1957	NA	NA	rats	NA	oral	NA	NA	reference in Japanese	NA	**RTECS REFERENCE** *Japanese Kokai Tokyo Koho Patents. 54-163823 (U.S. Patent and Trademark Office. 79-163823)*
Carbamazepine	1957	4025	NA	NA	rats; 120-140 g	female	oral	suspension in arabica gum	observed for 8 days	reference paper in German; 20 animals per dose	NA	Stenger Von EG, Roulet FC. 1964. Zur Toxikologie des Antiepilepticum Tegretol. Medicina Experimentalis 11:191-201.
Carbon tetrachloride	2350	1020	861 - 1211 (95% CL)	Weil (1952)	Wistar-derived Porton strain rats (SPF); 100 - 160 g	male	oral gastric intubation	1:1 (v/v) mixture in liquid paraffin; lightly anesthetized w/ether; geometric doses by factor of 12 or 144	deaths observed for 1 week	18 hour fasting before dosing; 20 - 25 rats used; groups of 5 rats; normal stock diet	NA	McLean AEM, McLean EK. 1966. The effect of diet and 1,1,1-trichloro-2,2-bis (p-chlorophenyl) ethane (DDT) on microsomal hydroxilating enzymes and on sensitivity of rats to carbon tetrachloride poisoning. Biochem J 100:564-571. *Royal Free Hospital, London, UK*
Carbon tetrachloride	2350	2343	2136 - 2566 (95% CL)	Weil (1952)	Wistar-derived Porton strain rats (SPF); 100 - 160 g	male	oral gastric intubation	1:1 (v/v) mixture in liquid paraffin; lightly anesthetized w/ether; geometric doses by factor of 1.2 or 1.44	deaths observed for 1 week	18 hour fasting before dosing; 20 - 25 rats used; groups of 5 rats; protein-free diet; rats fed protein-free diet 1 - 3 weeks before dosing; continued protein-free diet through out observation period	NA	McLean AEM, McLean EK. 1966. The effect of diet and 1,1,1-trichloro-2,2-bis (p-chlorophenyl) ethane (DDT) on microsomal hydroxilating enzymes and on sensitivity of rats to carbon tetrachloride poisoning. Biochem J 100:564-571. *Royal Free Hospital, London, UK*
Carbon tetrachloride	2350	2350	NA	Rosiello (1979) and Bliss (1938)	rats	male	oral	1500, 2000, 2800, 3900 mg/kg	1500 mg/kg: 0/1 dead; 2000 mg/kg: 0/1 dead; 2800 mg/kg: 1/1 dead; 3900 mg/kg: 1/1 dead; 2 of 4 rats dead; LD50 based on 4 rats used	rats acclimated for 5 days; rats observed for 14 days; 4 groups of rats used for each dose (1, 2, 3, 5 rats per group; 11 rats per dose); 9 rats for initial range finding;10 mg/kg - 0/3 dead; 100 mg/kg - 0/3 dead; 1000 mg/kg - 2/3 dead	NA	Lorke D. 1983. A new approach to practical acute toxicity testing. Arch Toxicol 54(4):275-288. *Institut fur Toxikologie, Wuppertal, Federal Republic of Germany*
Carbon tetrachloride	2350	2500	NA	Rosiello (1979) and Bliss (1938)	rats	male	oral	1500, 2000, 2800, 3900 mg/kg	1500 mg/kg: 0/2 dead; 2000 mg/kg: 2/2 dead; 2800 mg/kg: 1/2 dead; 3900 mg/kg: 2/2 dead; 5 of 8 rats dead; LD50 based on 8 rats used	rats acclimated for 5 days; rats observed for 14 days; 4 groups of rats used for each dose (1, 2, 3, 5 rats per group; 11 rats per dose); 9 rats for initial range finding;10 mg/kg - 0/3 dead; 100 mg/kg - 0/3 dead; 1000 mg/kg - 2/3 dead	NA	Lorke D. 1983. A new approach to practical acute toxicity testing. Arch Toxicol 54(4):275-288. *Institut fur Toxikologie, Wuppertal, Federal Republic of Germany*
Carbon tetrachloride	2350	2500	NA	Rosiello (1979) and Bliss (1938)	rats	male	oral	1500, 2000, 2800, 3900 mg/kg	1500 mg/kg: 0/5 dead; 2000 mg/kg: 3/5 dead; 2800 mg/kg: 3/5 dead; 3900 mg/kg: 5/5 dead; 11 of 20 rats dead; LD50 based on 20 rats used	rats acclimated for 5 days; rats observed for 14 days; 4 groups of rats used for each dose (1, 2, 3, 5 rats per group; 11 rats per dose); 9 rats for initial range finding;10 mg/kg - 0/3 dead; 100 mg/kg - 0/3 dead; 1000 mg/kg - 2/3 dead	NA	Lorke D. 1983. A new approach to practical acute toxicity testing. Arch Toxicol 54(4):275-288. *Institut fur Toxikologie, Wuppertal, Federal Republic of Germany*
Carbon tetrachloride	2350	2500	NA	Rosiello (1979) and Bliss (1938)	rats	male	oral	1500, 2000, 2800, 3900 mg/kg	1500 mg/kg: 0/11 dead; 2000 mg/kg: 5/11 dead; 2800 mg/kg: 6/11 dead; 3900 mg/kg: 11/11 dead; 22 of 44 rats dead; LD50 based on same rats used for other Lorke (1983) values	rats acclimated for 5 days; rats observed for 14 days; 4 groups of rats used for each dose (1, 2, 3, 5 rats per group; 11 rats per dose); 9 rats for initial range finding;10 mg/kg - 0/3 dead; 100 mg/kg - 0/3 dead; 1000 mg/kg - 2/3 dead	NA	**RTECS REFERENCE** CODEN: ARTODN Bibliographic Data: Archives of Toxicology. (Springer-Verlag, Heidelberger Pl. 3, D-1000 Berlin 33, Fed. Rep. Ger.) V.32- 1974- CODEN Reference: 54,275,1983. Lorke D. 1983. "A new approach to practical acute toxicity testing." Arch Toxicol 54(4):275-288. Institut fur Toxikologie, Wuppertal, Federal Republic of Germany
Carbon tetrachloride	2350	2821 (1.77 mL/kg; sp. density is 1.594; convert LD50 to mg/kg	NA	Thompson method; Weil tables	Carworth-Wistar rats; 90-120 g; 4-5 weeks	male	oral gastric intubation	in aqueous solution; concentration intubated = 10 mg/mL; dosages arranged in a logarithmic series differing by a factor of 2	LD50 based on mortalities during a 14 day period	non-fasted; groups of 5 rats; single oral dose toxicity	reagent grade	Smyth HF, Weil CS, West JS, Carpenter CP. (1970). An exploration of joint toxic action:II. Equitoxic versus equivolume mixtures. Toxicol Appl Pharmacol. 17:498-503. (LD50 value)----- Smyth HF Jr, Carpenter CP, Weil CS, Pozzani UC, Striegel JA, Nycum JS. 1969. Range-finding toxicity data: List VII. Am Ind Hyg Assoc J 30:470-476. *Carnegie-Mellon University, Pittsburgh, PA*---------- Smyth HF Jr, Carpenter CP, Weil CS, Pozzani UC, Striegel JA. 1962. Range-finding toxicity data: List VI. Am Ind Hyg Assoc J 23:95-107. *Mellon Institute of Industrial Research, Pittsburg, PA* (experimental parameters)
Carbon tetrachloride	2350	2850	NA	Rosiello (1979) and Bliss (1938)	rats	male	oral	1500, 2000, 2800, 3900 mg/kg	1500 mg/kg: 0/3 dead; 2000 mg/kg: 0/3 dead; 2800 mg/kg: 1/3 dead; 3900 mg/kg: 3/3 dead; 4 of 412 rats dead; LD50 based on 12 rats used	rats acclimated for 5 days; rats observed for 14 days; 4 groups of rats used for each dose (1, 2, 3, 5 rats per group; 11 rats per dose); 9 rats for initial range finding;10 mg/kg - 0/3 dead; 100 mg/kg - 0/3 dead; 1000 mg/kg - 2/3 dead	NA	Lorke D. 1983. A new approach to practical acute toxicity testing. Arch Toxicol 54(4):275-288. *Institut fur Toxikologie, Wuppertal, Federal Republic of Germany*

CHEMICAL[1]	LD50[2] mg/kg oral rat RTECS 2002	LD50[3] mg/kg oral rat Primary Reference	LD50[4] mg/kg (range) Primary Reference	LD50 CALCULATION METHOD[5] Primary Reference	ANIMAL INFORMATION (stock, weight, age)	GENDER	ROUTE/ METHOD OF EXPOSURE[6]	DOSE	OBSERVATIONS	NOTES	CHEMICAL SOURCE	PRIMARY REFERENCE
Carbon tetrachloride	2350	2920	2450 - 3470 (95% CL)	NA	rats	male and female	oral; stomach intubation	10 dosage levels; suspended in corn oilk with acacia; single dose	190 rats used	NA	NA	McCollister DD, Hollingsworth RL, Oyen F, Rowe VK. 1955. Comparative inhalation toxicity of fumigant mixtures. Arch Ind Health pp.1 - 7. *Dow Chemical, Midland, MI*
Carbon tetrachloride	2350	2981 (1.87 mL/kg; sp. density is 1.594; convert LD50 to mg/kg)	slope = 1.62	Litchfield and Wilcoxon method (1949)	Scho:Wistar C rats; 150-180 g; 56 +/- 2 days	female	oral	single dose; 50 mg/kg bw carbon tetrachloride in 5 mL peanut oil/kg bw	48 hour observation; LD50 determined on rats monthly for a year and average reported for whole year	reference in German; year 4	NA	Von Schmidt P, Wolff DL, Burck D, Wilhelm M. 1979. Sensitivity of female Wistar rats to carbon tetrachloride, determined by the LD50, and the hexobarbital sleeping time after a single oral dose. Z Versuchstierkd. 21(3):153-162. *Zentralinstitut fur Arbeitsmedizin der DDR, Berlin, Germany*
Carbon tetrachloride	2350	3682 (2.31 mL/kg; sp. density is 1.594; convert LD50 to mg/kg)	slope = 1.83	Litchfield and Wilcoxon method (1949)	Scho:Wistar C rats; 150-180 g; 56 +/- 2 days	female	oral	single dose; 50 mg/kg bw carbon tetrachloride in 5 mL peanut oil/kg bw	48 hour observation; LD50 determined on rats monthly for a year and average reported for whole year	reference in German; year 3	NA	Von Schmidt P, Wolff DL, Burck D, Wilhelm M. 1979. Sensitivity of female Wistar rats to carbon tetrachloride, determined by the LD50, and the hexobarbital sleeping time after a single oral dose. Z Versuchstierkd. 21(3):153-162. *Zentralinstitut fur Arbeitsmedizin der DDR, Berlin, Germany*
Carbon tetrachloride	2350	4081 (2.56 mL/kg; sp. density is 1.594; convert LD50 to mg/kg)	slope = 1.60	Litchfield and Wilcoxon method (1949)	Zam:Wistar C rats; 150-180 g; 56 +/- 2 days	female	oral	single dose; 50 mg/kg bw carbon tetrachloride in 5 mL peanut oil/kg bw	48 hour observation; LD50 determined on rats monthly for a year and average reported for whole year	reference in German; year 4	NA	Von Schmidt P, Wolff DL, Burck D, Wilhelm M. 1979. Sensitivity of female Wistar rats to carbon tetrachloride, determined by the LD50, and the hexobarbital sleeping time after a single oral dose. Z Versuchstierkd. 21(3):153-162. *Zentralinstitut fur Arbeitsmedizin der DDR, Berlin, Germany*
Carbon tetrachloride	2350	4288 (2.69 ml/kg; sp.density is 1.594; converted LD50 to mg/kg	slope = 1.59	Litchfield and Wilcoxon method (1949)	Zam:Wistar C rats; 150-180 g; 56 +/- 2 days	female	oral	single dose; 50 mg/kg bw carbon tetrachloride in 5 mL peanut oil/kg bw	48 hour observation; LD50 determined on rats monthly for a year and average reported for whole year	reference in German; year 3	NA	Von Schmidt P, Wolff DL, Burck D, Wilhelm M. 1979. Sensitivity of female Wistar rats to carbon tetrachloride, determined by the LD50, and the hexobarbital sleeping time after a single oral dose. Z Versuchstierkd. 21(3):153-162. *Zentralinstitut fur Arbeitsmedizin der DDR, Berlin, Germany*
Carbon tetrachloride	2350	4336 (2.72 mL/kg; sp. density is 1.594; convert LD50 to mg/kg)	slope = 1.44	Litchfield and Wilcoxon method (1949)	Zam:Wistar C rats; 150-180 g; 56 +/- 2 days	female	oral	single dose; 50 mg/kg bw carbon tetrachloride in 5 mL peanut oil/kg bw	48 hour observation; LD50 determined on rats monthly for a year and average reported for whole year	reference in German; year 2	NA	Von Schmidt P, Wolff DL, Burck D, Wilhelm M. 1979. Sensitivity of female Wistar rats to carbon tetrachloride, determined by the LD50, and the hexobarbital sleeping time after a single oral dose. Z Versuchstierkd. 21(3):153-162. *Zentralinstitut fur Arbeitsmedizin der DDR, Berlin, Germany*
Carbon tetrachloride	2350	4670 (2.93 mL/kg; sp. density is 1.594; convert LD50 to mg/kg)	slope = 1.57	Litchfield and Wilcoxon method (1949)	Zam:Wistar C rats; 150-180 g; 56 +/- 2 days	female	oral	single dose; 50 mg/kg bw carbon tetrachloride in 5 mL peanut oil/kg bw	48 hour observation; LD50 determined on rats monthly for a year and average reported for whole year	reference in German; year 1	NA	Von Schmidt P, Wolff DL, Burck D, Wilhelm M. 1979. Sensitivity of female Wistar rats to carbon tetrachloride, determined by the LD50, and the hexobarbital sleeping time after a single oral dose. Z Versuchstierkd. 21(3):153-162. *Zentralinstitut fur Arbeitsmedizin der DDR, Berlin, Germany*
Carbon tetrachloride	2350	> 5000	NA	Dixon (1965) and Bruce (1985)	Fischer 344 rats; 77 days old at test	female	oral gavage	in deionized water; maximum volume dose 10 mL/kg; 5 dose levels: 0, 150, 500, 1500, 5000 mg/kg; single dose	7 day survival time	fasted overnight; initial dose levels = 100, 1000, and 5000 mg/kg; subsequent doses selected by up-and-down method (Bruce, 1985, 1987); 5 groups of 8 rats each; 40 rats used; 7 -15 rats used in first LD50 estimate	analytical grad_; 99+% pure; Aldrich Chemical Co.	Berman E, Schlicht M, Moser VC, MacPhail RC. 1995. A multidisciplinary approach to toxicological screening: I. Systemic toxicity. J Toxicol Environ Health 45(2): 127-43. *Health Effects Res. Lab., U.S.EPA, Research Triangle Park, NC*
Carbon tetrachloride	2350	5453	4660 - 6404 (95% CI)	Probit analysis	Crl-CD rats from Charles River Breeding lab; 220-280 g; 60 days old	male	oral; intragastric intubation	15 - 45% solution dissolved or suspended in corn oil; single dose; 2500, 3000, 4000, 5000, 8000, 10000, 11000 mg/kg doses	observed daily for 14 days; death within 2 days; toxic symptoms: salivation, weakness, pallor, lethargy, diarrhea, weight loss	24 hour fast before dosing; 7 groups of 10; 70 rats used; 35 rats died; doses of 10000 mg/kg or greater administered in 2 portions at 15 minutes apart	99+% pure; E.I. Du Pont de Nemours	Dashiell OL, Kennedy GL Jr. 1984. The effects of fasting on the acute oral toxicity of nine chemicals in the rat. J Appl Toxicol 4(6): 320-325. *E.I. Du Pont de Nemours & Co., Newark, DE*
Carbon tetrachloride	2350	6200	5082 - 7564	NA	rats; 220 +/- 40 g		oral; intragastric	NA	NA	(source of information not provided)	NA	Izmerov NF, Sanotsky IV, Sidorov KK. 1982. Toxicometric Parameters of Industrial Toxic Chemicals under Single Exposure. International Register of Potentially Toxic Chemicals (IRPTC). United Nations Environment Programme (UNEP). Centre of International Projects, GKNT. Moscow, Russia.
Carbon tetrachloride	2350	7540 (4.73 mL/kg; sp. density is 1.594; convert LD50 to mg/kg)	6631 - 8576 (95% CL)	Weil (1952)	Sprague-Dawley rats; 260-360 g; 12-16 weeks	male	oral; stomach tube	solution in 1.5 mL peanut oil; light anesthesia; doses (mL/kg) = 3.6, 4.5, 5.4, 6.4	observed for 48 hour; doses (mL/kg), dead animals: 3.6 -- 0/4; 4.5 -- 1/4; 5.4 -- 3/4; 6.4 -- 4/4	16 rats used	British Drug Houses Ltd, Pool, Great Britain	Pound AW, Horn L, Lawson TA. 1973. Decreased toxicity of dimethylnitrosamine in rats after treatment with carbon tetrachloride. Pathology 5:233-242. *University of Queensland, Brisbane, Australia*
Carbon tetrachloride	2350	10054	8758 - 11009 (95% CI; slope = 9.2)	Finney (1971) Probit Analysis	Crl-CD rats from Charles River Breeding lab; 220-280 g; 60 days old	male	oral; intragastric intubation	0.5 - 3.9% suspension; dissolved or suspended in corn oil; single dose; 2000, 2700, 3500, 4500, 8000, 10000, 11000, 12000, 14000, 15000, 17000 mg/kg doses	observed daily for 14 days; death within 3 days; toxic symptoms: salivation, weakness, pallor, lethargy, diarrhea, weight loss	non fasted; 11 groups of 10; 110 rats used; 49 rats died; doses of 10000 mg/kg or greater were administered in 2 portions at 15 minutes apart	99+% pure; E.I. Du Pont de Nemours	Dashiell OL, Kennedy GL Jr. 1984. The effects of fasting on the acute oral toxicity of nine chemicals in the rat. J Appl Toxicol 4(6): 320-325. E.I. Du Pont de Nemours & Co., Newark, DE data from EPA TSCATS database; Oral LD50 test in rats with methane,tetrachloro-* with cover letter dated 081092; (1981) EPA Document No. 88-920010018 Fiche No. OTS0571676; *E.I Dupont DeNemours & Co., Inc./Haskell Labs*
Chloral hydrate	479	285	+/- 21 (S.E.)	NA	Charles River Sprague-Dawley rats; 1-2 days	NA	oral	NA	NA	data is from Yeary et al.1966	NA	Goldenthal EI. 1971. A compilation of LD50 values in newborn and adult animals. Toxicology and Applied Pharamacology 18:185-207.
Chloral hydrate	479	479	+/- 42 (S.E.)	NA	Charles River Sprague-Dawley rats; adult	NA	oral	NA	NA	data is from Yeary et al.1966	NA	**RTECS REFERENCE** *CODEN: TXAPA9 Bibliographic Data: Toxicology and Applied Pharmacology. (Academic Press, Inc., 1 E. First St., Duluth, MN 55802) V.1-1959- CODEN Reference: 18,185,1971.* ---- Goldenthal EI. 1971. A compilation of LD50 values in newborn and adult animals. Toxicology and Applied Pharamacology 18:185-207

CHEMICAL[1]	LD50[2] mg/kg oral rat RTECS 2002	LD50[3] mg/kg oral rat Primary Reference	LD50[4] mg/kg (range) Primary Reference	LD50 CALCULATION METHOD[5] Primary Reference	ANIMAL INFORMATION (stock, weight, age)	GENDER	ROUTE/ METHOD OF EXPOSURE[6]	DOSE	OBSERVATIONS	NOTES	CHEMICAL SOURCE	PRIMARY REFERENCE
Chloral hydrate	479	479	+/- 42 (S.E.)	Miller and Tainter (1944)	Charles River CD and Sprague-Dawley rat strains; > 100 g; adult	NA	oral intubation; up to 50 mL/kg	NA	rats observed for 7 days; observed up to 14 days when heavy metals or other compounds that produce latent death were investigated	fasted overnight	NA	Yeary RA, Benish RA, Finkelstein M. 1966. Acute Toxicity of Drugs in Newborn Animals. Journal of Pediatrics 69 (4):663-667. *Dept. of Veterinary Preventive Medicine, Ohio State University, Columbus, OH*
Chloral hydrate	479	500	NA	NA	NA	rat	oral	aqueous solution or suspension	produced degree of CNS depression	NA	NA	Finnegan JK, Larson PS, Haag HB, Page SG Jr. 1951. March. Sedative and toxic effects of several chloral derivatives. Federation Proceedings v. 10:294. *Medical College of Virginia, Richmond, VA*
Chloral hydrate	479	800	NA	graphically	white rats; 125-250 g	male and female	oral;stomach tube	single dose; 4% solutions in distilled water; dose is mg/kg, rats per dose: 700-25; 800-34; 900-22; 1000-32; 1100-24	acute toxicity same for male and female;	fasted for 16 hour; 137 rats used; first report for chloral hydrate LD50	NA	Adams WL. 1943. The comparative toxicity if chloral alcoholate and chloral hydrate. J Pharm Exp Ther 78:340-345. *Union University, Albany, NY*
Chloral hydrate	479	863	622.9 - 832.1	Bliss-Probit method	Sprague-Dawley rats; 5 weeks	male	oral gavage	dissolved in saline; range (mg/kg) of doses 417, 583, 816, 1143, 1600	rats observed at 6 hours after dosing and a once a day for 1 - 2 weeks; most rats found dead within 3 days; 29 of 50 rats died; toxic symptoms: sleep to coma	animals acclimated to environment for 1 week before testing; 5 groups of 10 rats each; fasted 16 hours before dosing; 100% mortality = 1600 mg/kg; 0% mortality = 417 mg/kg	Wako Pure Chemicals Co.	Kitagawa H, Saito H, Sugimoto T, Yanaura S, Kitagawa H, Hosokawa T, Sakamoto K. 1982. Effects of diiospropyl-1,3-dithiol-2-ylidene malonate (NKK-105) on acute toxicity of various drugs and heavy metals. J Toxicol Sci 7(2):123-34. *Chiba University; Hoshi College of Pharmacy; Showa University -- Japan*
Chloramphenicol	2500	692.9	-/+ 70 (SEM)	Bliss (1938)	Harlan rats; < 4 days; 6-9 g	NA	intragastric	cmpd suspended in 4% acacia saline solution; 2% solution administered; 400, 500, 620, 800 mg/kg doses	observed for 7 days; death within 24 h; 400 mg/kg-0/5, 500 mg/kg-0/5, 620 mg/kg-3/5, 800 mg/kg-3/5	NA	NA	Worth HM, Kachman C, Anderson RC. 1963. Inartistric injection for toxicity studies with newborn rats. Toxic Appl Pharmac 5:719-727. *Eli Lilly and Company, Indianapolis, IN*
Chloramphenicol	2500	1040	776 - 1394	NA	MJ rats; 1-2 days	NA	oral	NA	NA	information from: drug applications from pharmaceutical manufacturers, the literature, and FDA labs	NA	Goldenthal EI. 1971. A compilation of LD50 values in newborn and adult animals. Toxicology and Applied Pharamacology. 18. Pp. 185 - 207. *Bureau of Drugs, Food and Drug Administration, Dept. of Health, Education, and Welfare, Rockville, MD.*
Chloramphenicol	2500	2188	NA	Bliss (1938)	Harlan rats; 30-40 g; 21-25 days; weanling	NA	gavage	cmpd suspended in 4% acacia saline solution; 20% solution administ; 1800, 2500, 3300 mg/kg doses	observed for 7 days; death within 3 days; 1800 mg/kg-0/5, 2500 mg/kg-4/5, 3300 mg/kg-5/5	NA	NA	Worth HM, Kachman C, Anderson RC. 1963. Inartistric injection for toxicity studies with newborn rats. Toxic Appl Pharmac 5:719-727. *Eli Lilly and Company, Indianapolis, IN*
Chloramphenicol	2500	2500	NA	NA	albino rats	NA	oral	NA	NA	reference paper in Italian; 1983/84 RTECS used the same reference but RC had a different LD50 and ZEBET did not provide the reference)	NA	**RTECS REFERENCE** *CODEN: FRPSAX Bibliographic Data: Farmaco, Edizione Scientifica. (Casella Postale 227, 27100 Pavia, Italy) V.8-43 1953-88 For publisher information, see FRMCE8 CODEN Reference: 10,3,1955.* ---- Almirante L, Caprio L, de Carneri I, Defranceschi A, Zamboni V. 1955. Studi sul cloroamfenicolo: (1) nuove sintesi della d-treo-2-dichlorometil-4-[(4'-nitrofenil)Ossimetil] Ossazolina (2) E dati sur potere antibiotico della stessa. Farmaco, Edizione Scientifica 10(1):3-13.
Chloramphenicol	2500	3400	2252 - 5139	NA	MJ rats; adult	NA	oral	NA	NA	information from: drug applications from pharmaceutical manufacturers, the literature, and FDA labs	NA	Goldenthal EI. 1971. A compilation of LD50 values in newborn and adult animals. Toxicology and Applied Pharamacology 18:185-207. *Bureau of Drugs, Food and Drug Administration, Dept. of Health, Education, and Welfare, Rockville, MD.* This value used by RC (1977 RTECS).
Chloramphenicol	2500	5000	NA	NA	Harlan Wistar rats	NA	oral	NA	NA	information from: drug applications from pharmaceutical manufacturers, the literature, and FDA labs	NA	Goldenthal EI. 1971. A compilation of LD50 values in newborn and adult animals. Toxicology and Applied Pharamacology 18:185-207. *Bureau of Drugs, Food and Drug Administration, Dept. of Health, Education, and Welfare, Rockville, MD.*
Chloramphenicol	2500	> 5000	NA	Bliss (1938) method	Harlan rats; 150 g; adult	NA	gavage	cmpd suspended in 4% acacia saline solution; 30% solution administered; 5000 mg/kg dose	observed for either 7 or 14 days; 10 rats used; 2 dead; death on 1st day	NA	NA	Worth HM, Kachman C, Anderson RC. 1963. Inartistric injection for toxicity studies with newborn rats. Toxic Appl Pharmac 5:719-727. *Eli Lilly and Company, Indianapolis, IN*
Citric acid	3000	3000	NA	approximative	THOM (SPF) rats; 151-213 g; 48 days-males; 62 days-female	male and female	oral gavage	2500 - 5000mg/kg doses; cmpd in hydroxyethylcellulose	NA	32 male and 32 female rats; 64 rats used; performed under GLPs	NA	**RTECS REFERENCE** *CODEN: OYYAA2 Bibliographic Data: Oyo Yakuri. Pharmacometrics. (Oyo Yakuri Kenkyukai, CPO Box 180, Sendai 980-91, Japan) V.1- 1967- CODEN Reference: 43,561,1992.-* Schneider PM, Bauer A, Eckenfels C, Hohbach L, Lutzen H, Puschner R, Serbedija J, Wiegleb P, Lehmann H. 1992. Acute, subacute and chronic toxicity studies of pimobendan in laboratory animals. Oyo Yakuri/Pharmacometrics 43(6):561-578.
Citric acid	3000	11700	10080 - 13570 (95% CL)	Litchfield and Wilcoxon method	SD-JCL rats; 110-140 g; 5 weeks	male	oral	2 mL/100 g bw	observed for 7 days; stimulation within several minutes, then ataxia and prostration at 50 minutes; mydriasis, decreased heart rate and respiration; death at 12500 and 18000 mg/kg in 20-180 minutes by resp. failure; 1 rat at 10420 mg/kg died at 20 hours; autopsy showed hemorrage of gastric mucosa	6 rats/dose; number of doses not reported	TAKEDA-citric acid (refined product produced by yeast fermention of paraffins)	Yokotani H, Usui T, Nakaguchi T, Kanabayashi T, Tanda M, Aramaki Y. 1971. Acute and subacute toxicological studies of TAKEDA-citric acid in mice and rats. J Takeda Res Lab 30(1):25-31.
Colchicine	no rat oral data from RTECS	5.886 (mouse)	3.901 - 7.508	NA	B6D2F1 (BDF1) mice	NA	Oral	in saline	NA	Mice fasted prior to dosing	NA	**RTECS REFERENCE--MOUSE ORAL** CODEN: NCISP* Bibliographic Data: National Cancer Institute Screening Program Data Summary, Developmental Therapeutics Program. (Bethesda, MD 20205) CODEN Reference: JAN1986.

CHEMICAL[1]	LD50[2] mg/kg oral rat RTECS 2002	LD50[3] mg/kg oral rat Primary Reference	LD50[4] mg/kg (range) Primary Reference	LD50 CALCULATION METHOD[5] Primary Reference	ANIMAL INFORMATION (stock, weight, age)	GENDER	ROUTE/ METHOD OF EXPOSURE[6]	DOSE	OBSERVATIONS	NOTES	CHEMICAL SOURCE	PRIMARY REFERENCE
Colchicine	no rat oral data from RTECS	18 (mouse)	NA	Lorke (1983)	MS/Ae mice from Hitachi Medical Laboratories (Sanwa, Japan); 317-346 g; 7 weeks	male	oral	1.0, 10.0, 14.0, 22.5, 37.5, 60.0, 100.0 mg/kg in physiological saline	Dose and Deaths: 1.0 - 0/3; 10.0 - 0/3; 14.0 - 0/1; 22.5 -1/1; 37.5 - 1/1; 60.0 - 1/1;100.0 - 3/3	13 mice used; acclimated for 1 week before test	Wako Pure Chemical Industries Ltd. (Osaka, Japan)	Asano N, Morita T, Watanabe Y. 1989. Micronucleus test with colchicine given by intraperitoneal injection and oral gavage. Mutat Res 223:391-394.
Colchicine	no rat oral data from RTECS	29 (mouse)	NA	Lorke (1983)	CD-1 mice from Charles River Japan Inc (Hino, Japan); 312-382 g; 7 weeks	male	oral	1.0, 10.0, 14.0, 22.5, 37.5, 60.0, 100.0 mg/kg in physiological saline	Dose and Deaths: 1.0 - 0/3; 10.0 - 0/3; 14.0 - 0/1; 22.5 -0/1; 37.5 - 1/1; 60.0 - 1/1; 100.0 - 3/3	13 mice used; acclimated for 1 week before test	Wako Pure Chemical Industries Ltd. (Osaka, Japan)	Asano N, Morita T, Watanabe Y. 1989. Micronucleus test with colchicine given by intraperitoneal injection and oral gavage. Mutat Res 223:391-394.
Cupric sulfate pentahydrate	300	236.2	NA	NA	Sprague-Dawley rats	NA	oral	200, 500, 1000, 2000	NA	NA	T.C. copper sulfate powdered (50% in water)	U.S. EPA, Office of Pesticide Programs; Health Effects Division; Tox Oneliners; EPA Chem. Code: 024401; Core Grade/Tox Record No. 002705
Cupric sulfate pentahydrate	300	300	NA	NA	rats	NA	oral	NA	NA	value assumed to be from Lehman 1951	NA	**RTECS REFERENCE** *CODEN: 85ARAE Bibliographic Data: "Agricultural Chemicals," Thomson, W.T., 4 vols., Fresno, CA, Thomson Publications, 1976/77 revision CODEN Reference: 2, 182, 1977.*
Cupric sulfate pentahydrate	300	300	NA	NA	rats	NA	oral; stomach tube	NA	violent retching, muscular spasms and collapse; onset within minutes	information from the laboratories of Division of Pharmacology, U.S. FDA.; fasted animals	NA	Lehman AJ. 1951. Chemicals in Foods: a report to the association of food and drug officials on current developments. Part II. Pesticides. Quarterly Bulletine (Association of Food and Drug Officials of the United States). v15:22 - 133. *U.S. FDA* ***RTECS SOURCE***
Cupric sulfate pentahydrate	300	450	346 - 585 (95% CL)	Litchfield and Wilcoxon method (1949)	Sprague-Dawley rats; 155-175 g	female	oral gavage	single dose; 9 dose levels from 100 - 5000mg/kg	animals observed daily and survivors killed 14 days post-dose; all deaths within first week of dosing; weight loss, lethargy and death; dose (mg/kg), no dead/no dosed: 100 - 0/5; 200 - 0/5; 300 - 3/10; 500 - 0/5; 625 - 0/10; 750 - 4/5; 5000 - 5/5	tested under GLPs; groups of rats (5/sex/dose group) were administered vehicle (10 mL/kg) or test article; 45 animals used	powder 99% pure	Deenihan MJ.1987; Fine 20 Copper Sulfate Pentahydrate - Acute Toxicology Testing: (A) Acute Oral Toxicity. Northview Pacific laboratories, Inc. U.S. EPA, Office of Pesticide Programs; Health Effects Division; Tox Oneliners; MRID No.433962-01A; EPA Chem. Code: 024401; Core Grade/Tox Record No. acceptable; 011521; Apr. 20, 1995
Cupric sulfate pentahydrate	300	472.5	NA	NA	rat	NA	oral	NA	NA	NA	copper sulfate (powder)	WARF Institute, Inc.; WARF No. 5032161; Jan. 1, 1975; U.S. EPA, Office of Pesticide Programs; Health Effects Division; Tox Oneliners; MRID No.00058839; EPA Chem. Code: 024401; Core Grade/Tox Record No. supplementary 004457
Cupric sulfate pentahydrate	300	790	416 - 1501 (95% CL)	Litchfield and Wilcoxon method (1949)	Sprague-Dawley rats; 225-250 g	male	oral gavage	single dose; 9 dose levels from 100 - 5000 mg/kg	animals observed daily and survivors killed 14 days post-dose; all deaths within first week of dosing; weight loss, lethargy and death; dose (mg/kg), no dead/no dosed: 100 - 0/5; 300 - 2/5; 750 - 1/5; 1000 - 3/5; 1250 - 2/5; 5000 - 5/5	tested under GLPs; groups of rats (5/sex/dose group) were administered vehicle (10 ml/kg) or test article; 30 animals used	powder 99% pure	Deenihan MJ.1987; Fine 20 Copper Sulfate Pentahydrate - Acute Toxicology Testing: (A) Acute Oral Toxicity. Northview Pacific laboratories, Inc. U.S. EPA, Office of Pesticide Programs; Health Effects Division; Tox Oneliners; MRID No.433962-01A; EPA Chem. Code: 024401; Core Grade/Tox Record No. acceptable; 011521; Apr. 20, 1995
Cupric sulfate pentahydrate	300	960	710 - 1300 (these limits are +/- 1.96 S.D.)	Thompson method; Weil tables	Carworth-Wistar rats; 90-120 g; 4-5 weeks	male	oral gastric intubation	in aqueous solution; concentration intubated = 50 mg/mL; dosages arranged in a logarithmic series differing by a factor of 2	LD50 based on mortalities during a 14 day period	non-fasted; groups of 5 rats; single oral dose toxicity	reagent grade	Smyth HF Jr, Carpenter CP, Weil CS, Pozzani UC, Striegel JA, Nycum JS. 1969. Range-finding toxicity data: List VII. Am Ind Hyg Assoc J 30:470-476. *Carnegie-Mellon University, Pittsburgh, PA* (LD50 value)-- Smyth HF Jr, Carpenter CP, Weil CS, Pozzani UC, Striegel JA. 1962. Range-finding toxicity data: List VI. Am Ind Hyg Assoc J 23:95-107. *Mellon Institute of Industrial Research, Pittsburg, PA* (experimental parameters)
Cupric sulfate pentahydrate	300	1570	1030 - 2400	NA	rat	NA	oral	NA	NA	low purity (20%)	copper sulfate pentahydrate 20% (Odor inhibitor/bactericide)	Hazleton Laboratories America, Inc.; HLA B1100274; Feb.27, 1989; U.S. EPA, Office of Pesticide Programs; Health Effects Division; Tox Oneliners; MRID No. 41043001; EPA Chem. Code: 024401; Core Grade/Tox Record No. Guideline 009092; Feb. 5, 1992
Cupric sulfate pentahydrate	300	2300	1150 - 3390	NA	rat	female	oral	NA	NA	low purity (11%)	copper sulfate 11%	BASF; 82/168; Aug. 11, 1986; U.S. EPA, Office of Pesticide Programs; Health Effects Division; Tox Oneliners; MRID No. 00149179; EPA Chem. Code: 024401; Core Grade/Tox Record No. Guideline 006197
Cupric sulfate pentahydrate	300	2530	2010 - 3170	NA	rat	male and female	oral	NA	NA	low purity (11%)	copper sulfate 11%	BASF; 82/168; Aug. 11, 1986; U.S. EPA, Office of Pesticide Programs; Health Effects Division; Tox Oneliners; MRID No. 00149179; EPA Chem. Code: 024401; Core Grade/Tox Record No. Guideline 006197
Cupric sulfate pentahydrate	300	2610	1890 - 4140	NA	rat	male	oral	NA	NA	low purity (11%)	copper sulfate 11%	BASF; 82/168; Aug. 11, 1986; U.S. EPA, Office of Pesticide Programs; Health Effects Division; Tox Oneliners; MRID No. 00149179; EPA Chem. Code: 024401; Core Grade/Tox Record No. Guideline 006197
Cupric sulfate pentahydrate	300	LD50 > 0.5mL/kg < 2.0 mL/kg	NA	NA	Sprague-Dawley rats	male	oral	0.5, 2.0, 5.0 mL/kg	no toxic signs	NA	Cutrine (28% copper sulfate)	WARF Institute, Inc.; WARF No. 1052198; Mar. 20, 1978; U.S. EPA, Office of Pesticide Programs; Health Effects Division; Tox Oneliners; MRID No.00157309; EPA Chem. Code: 024401; Core Grade/Tox Record No. supplementary 002707

CHEMICAL[1]	LD50[2] mg/kg oral rat RTECS 2002	LD50[3] mg/kg oral rat Primary Reference	LD50[4] mg/kg (range) Primary Reference	LD50 CALCULATION METHOD[5] Primary Reference	ANIMAL INFORMATION (stock, weight, age)	GENDER	ROUTE/ METHOD OF EXPOSURE[6]	DOSE	OBSERVATIONS	NOTES	CHEMICAL SOURCE	PRIMARY REFERENCE
Cycloheximide	2	1 (calculated by NICEATM)	NA	NA	rats	NA	oral; stomach tube	aqueous solutions or suspensions; 0.5, 0.75, 1.0, 1.5, 2.0, 2.5, 5.0, 7.5, 10, 15, 25, 50, 75, 100, 150, 200 mg/kg dose range	rats at higher doses had bloody urine and profuse watery feces	2 rats/dose; 32 rats used; 27/32 rats dead; 75-200 mg/kg: all dead within 5 hour; 10-50 mg/kg: all dead overnight; 7.5 mg/kg: 1 dead overnight, other at 26 hour; 5.0 mg/kg: 1 dead overnight, other at 24 hour; 2.5 mg/kg: all dead at 24 and 25 hour; 2.0 mg/kg: all dead overnight and 23 hour; 1.5 mg/kg: all dead at 25 hour; 1.0 mg/kg: 1 dead at 25 hour, 1 survived; 0.5 - 0.75 mg/kg: all survived	Upjohn Company	Traub R, DeWitt JB, Welch JF, Newman DJ. 1950. Toxicity and repellency to rats of actidione. J Am Pharm Assoc (Sci. Ed.) 39(10):552 - 555. *Army Medical Department Research and Graduate School, Washington, D.C.*
Cycloheximide	2	1.8	NA	NA	rats	NA	oral	NA	NA	NA	NA	**RTECS REFERENCE** *CODEN: UPJOH* Bibliographic Data: "Compounds Available for Fundamental Research, Volume II-6, Antibiotics, A Program of Upjohn Company Research Laboratory." (Kalamazoo, MI 49001) CODEN Reference: 2(6),-,1971.*
Cycloheximide	2	2.5	NA	NA	rats	NA	oral	NA	excessive salivation, diarrhea, nervousness, depression	NA	Upjohn Company	Ford JH, Klomparens W. 1960. Cycloheximide (Acti-dione) and its non agricultural uses. Antibiotics and Chemotherapy 10:682 - 687. *The Upjohn Co., Kalamazoo, MI*
Dibutyl phthalate	7499	7499	7072 - 8006 (95% CL)	NA	rats	NA	oral	NA	NA	NA	NA	**RTECS REFERENCE** *CODEN: WDZAEK Bibliographic Data: Weisheng Dulixue Zazhi. Journal of Health Toxicology. (Weisheng Dulixue Zazhi Bianjibu, Dongdaqiao, Chaoyang Menwai, Beijing, Peop. Rep. China) V.1- 1987 CODEN Reference: 5,264,1991.*
Dibutyl phthalate	7499	8000	NA	NA	Sprague-Dawley rats; 60-75 g; 5-6 weeks	male	oral	single undiluted doses; 4000, 8000, 16000, 32000 mg/kg doses	7 day observation	4000 mg/kg - 0/3 dead; 8000 mg/kg - 4/9 dead; 16000 mg/kg - 6/6 dead; 32000 mg/kg - 6/6 dead; 24 rats used	NA	Smith CC. 1953. Toxicity of butyl stearate, dibutyl sebacate, dibutyl phthalate, and methoxyyethyl oleate. Arch Ind Hyg 7:310-318.
Dibutyl phthalate	7499	8380	6860 - 10230	NA	Sherman strain rats; 120 g	NA	NA	dosage series when expressed in /kg constitutes the antilogarithms of 1.0, 1.1, 1.2, etc	NA	NA	NA	Smyth HF, Carpenter CP. 1948. Further experience with the range finding test in the industrial toxicology laboratory. J Ind Hyg Toxicol 30:63-68. *Melon Institute, Pittsburgh, PA*
Dibutyl phthalate	7499	12436 (11.9 mL/kg)	NA	Karber's method	white rats; 60-75 g; 6 weeks	NA	oral	NA	degenerative liver changes noted	reference is untranslated Russian with English abstract; NICEATM converted 11.9 mL/kg LD50 to mg/kg using provided density of 1.045 g/mL	NA	Homrowski S, Nikonorow M. 1959. Toksycznosc ostra ftalanu dwubutylu oraz ftalanu dwu-2-etyloheksylu produkcji krajowej. Roczniki Panstwowego Zakladu Higieny 10:321-327.
Dichlorvos (DDVP)	17	17	NA	NA	rats	NA	oral	NA	NA	unknown primary reference	NA	**RTECS REFERENCE** *CODEN: JPIFAN Bibliographic Data: Japan Pesticide Information. (Japan Plant Protection Assoc., 1-43-11, Komagome, Toshima-ku, Tokyo 170, Japan) No.1-61, 1969-92. For publisher information, see AGJAEP. CODEN Reference: (13),36,1972.*
Dichlorvos (DDVP)	17	50	NA	Litchfield and Wilcoxon method (1949)	CFY strain rats; 120+ g; adult	female	oral	NA	NA	NA	93% pure; Ciba-Geigy, Switzerland	Desi I. 1983. Neurotoxicological investigaton of pesticides in animal experiments. Neurobehav Toxicol 5:503-515. *National Institute of Hygiene, Hungary*
Dichlorvos (DDVP)	17	54 (calculated from negative log in mol/kg [3.61])	24 - 111 (CL)	Litchfield and Wilcoxon method (1949)	Wistar rats; 150 g	female	intragastric-ally (metal tube)	ethanol: water 1:4 solution used as solvent; 2 mL/kg dosage;	observed for 72 hours; decreased body weight	30 rats tested (5 groups of 6 rats)	95% pure	Gajewski D, Katkiewicz M. 1981. Activity of certain enzymes and histomorphological changes in subacute intoxication of rats with selected organophosphates. Acta Physiol Pol 32(5):507-520. *Agicultural Academy (and others), Warsaw, Poland*
Dichlorvos (DDVP)	17	56	48 - 65 (95% CL)	Litchfield and Wilcoxon method (1949)	Sherman strain rats; min.wt.: female = 200 g; min.age of 90 days	female	oral; stomach tube	chemical in peanut oil; 0.005 mL/g of bw	observed hourly on first day of dosage and twice a day thereafter until time of death; max survival = died within 1 hour	80 rats tested; LD50 value from Durham et al. 1957	technical grade	Gaines TB. 1960. The acute toxicity of pesticides to rats. Toxicol Appl Pharmacol 2:88-99. *U.S. Dept. of Health, Education, and Welfare, Savannah, GA* Mattson AM, Spillane JT, Pearce GW. 1955. Dimethyl 2,2-dichlorvinyl phosphate (DDVP), an organic phosphorous compound highly toxic to insects. J Agr Food Chem 3:319-321. *Communicable Disease Center, Savannah, GA*
Dichlorvos (DDVP)	17	56	48 - 65 (95% CL)	Litchfield and Wilcoxon method (1949)	Sherman albino rats	female	oral; stomach tube	dissolved in peanut oil; dosage rate of 5ul/g; DDVP concentration varied	bulging eyes, excessive lacrimation, sialorrhea, generalized muscle fasiculations, tremors; killed rats dead within 1 hour; all survivors completely recovered within 24 hours	NA	technical grade, 90%DDVP	Durham WF, Gaines TB, McCauley RH, Sedlak VA, Mattson MA, Hayes WJ. 1957. Studies on the toxicity of 0,0-dimethyl-2,2-dichlorovinyl phosphate (DDVP). AMA Arch Ind Health 15:340-349. *U.S. Dept. of Health, Education and Welfare, Savannah, GA*
Dichlorvos (DDVP)	17	68	59 - 79 (95% CL)	Litchfield and Wilcoxon method (1949)	Sherman albino rats	female	oral; stomach tube	dissolved in peanut oil; dosage rate of 5uL/g; DDVP concentration varied	bulging eyes, excessive lacrimation, sialorrhea, generalized muscle fasiculations, tremors; killed rats dead within I hour; all survivors completely recovered within 24 hours	NA	99% pure DDVP	Durham WF, Gaines TB, McCauley RH, Sedlak VA, Mattson MA, Hayes WJ. 1957. Studies on the toxicity of 0,0-dimethyl-2,2-dichlorovinyl phosphate (DDVP). AMA Arch Ind Health 15:340-349. *U.S. Dept. of Health, Education and Welfare, Savannah, GA*

CHEMICAL[1]	LD50[2] mg/kg oral rat RTECS 2002	LD50[3] mg/kg oral rat Primary Reference	LD50[4] mg/kg (range) Primary Reference	LD50 CALCULATION METHOD[5] Primary Reference	ANIMAL INFORMATION (stock, weight, age)	GENDER	ROUTE/ METHOD OF EXPOSURE[6]	DOSE	OBSERVATIONS	NOTES	CHEMICAL SOURCE	PRIMARY REFERENCE
Dichlorvos (DDVP)	17	80	62 - 104 (95% CL)	Litchfield and Wilcoxon method (1949)	Sherman strain rats; min. wt.: male = 175 g; min. age of 90 days	male	oral; stomach tube	chemical in peanut oil; 0.005 mL/g of bw	observed hourly on first day of dosage and twice a day thereafter until time of death; max survival = died within 1 hour	59 rats tested; LD50 value from reseach paper of Durham et al. 1957	technical grade	Gaines TB. 1960. The acute toxicity of pesticides to rats. Toxicol Appl Pharmacol 2:88-99. *U.S. Dept. of Health, Education, and Welfare, Savannah, GA* Mattson AM, Spillane JT, Pearce GW. 1955. Dimethyl 2,2-dichlorvinyl phosphate (DDVP), an organic phosphorous compound highly toxic to insects. J Agr Food Chem 3:319-321. *Communicable Disease Center, Savannah, GA*
Dichlorvos (DDVP)	17	80	NA	Litchfield and Wilcoxon method (1949)	CFY strain rats; 120+ g; adult	male	oral	NA	NA	NA	93% pure; Ciba-Geigy, Switzerland	Desi I. 1983. Neurotoxicological investigaton of pesticides in animal experiments. Neurobehav Toxicol 5:503-515. *National Institute of Hygiene, Hungary*
Dichlorvos (DDVP)	17	80	62 - 104 (95% CL)	Litchfield and Wilcoxon method (1949)	Sherman albino rats	male	oral; stomach tube	dissolved in peanut oil; dosage rate of 5 ul/g; DDVP concentration varied	bulging eyes, excessive lacrimation, sialorrhea, generalized muscle fasiculations, tremors; killed rats dead within 1 hour; all survivors completely recovered within 24 hours	NA	technical grade, 90%DDVP	Durham WF, Gaines TB, McCauley RH, Sedlak VA, Mattson MA, Hayes WJ. 1957. Studies on the toxicity of 0,0-dimethyl-2,2-dichlorovinyl phosphate (DDVP). AMA Arch Ind Health 15:340-349. *U.S. Dept. of Health, Education and Welfare, Savannah, GA*
Dichlorvos (DDVP)	17	80	71 - 90 (95% CL)	Litchfield and Wilcoxon method (1949)	Sherman albino rats	female	oral; stomach tube	dissolved in peanut oil; dosage rate of 5 ul/g; DDVP concentration varied	bulging eyes, excessive lacrimation, sialorrhea, generalized muscle fasiculations, tremors; killed rats dead within 1 hour; all survivors completely recovered within 24 hours	NA	technical grade, 90%DDVP	Durham WF, Gaines TB, McCauley RH, Sedlak VA, Mattson MA, Hayes WJ. 1957. Studies on the toxicity of 0,0-dimethyl-2,2-dichlorovinyl phosphate (DDVP). AMA Arch Ind Health 15:340-349. *U.S. Dept. of Health, Education and Welfare, Savannah, GA*
Dichlorvos (DDVP)	17	97.5	88.6 - 107 (95% CL slope = 1.24 [1.15 - 1.34])	Litchfield and Wilcoxon method (1949)	Fischer 344 rats; 7 weeks	male	oral gavage	dissolved in olive oil; 5 mL/kg dosing solution; 4 -5 dosages	24 hour observation; anti-cholinesterase signs of salivation, fasiculation, lacrimation, tremors, irregular respiration, prostration; all deaths observed between 2 -24 hours	aclimated for 1 week before dosing; 5 - 10 animals per each dosage	98.7% pure; Nippon Chemical Industrial Company, Ltd.	Ikeda T, Kojima T, Yoshida M, Takahashi H, Tsuda S, Shirasu Y. 1990. Pretreatment of rats with an organophosphorous insecticide, chlorfenvinphos, protects against subsequent challenge with the same compound. Fundam Appl Toxicol 14(3):560-567. *Mitsukaido Laboratories, Institute of Environmental Toxicology, Japan*
Diethyl phthalate	8600	> 5590 (reported as > 5.0 mL/kg; specific density = 1.118)	95% CL (where possible);	Litchfield and Wilcoxon method (1949)	Wistar albino rats; 139-164 g	male and female	oral; gavage	0.5, 1, 2, 5 mL/kg; single dose	observed at 1, 3, 6, and 24 hours after dosing; then observed daily for 14 days; 2 rats dead	8 groups of 10 rats (5M, 5F); 80 rats used; fasted overnight	NA	data from EPA TSCATS database; ORAL LD50 TEST IN RATS OF DIETHYL PHTHALATE WITH COVER LETTER DATED 05/09/94 (SANITIZED) (1978) EPA Document No. 86-940000887S Fiche No. OTS0557297; *Consumer Product Testing, Fairfield, NJ*
Diethyl phthalate	8600	8600	7840 - 9890	NA	rats	NA	oral	NA	NA	NA	NA	**RTECS REFERENCE** *CODEN: GTPZAB Bibliographic Data: Gigiena Truda i Professional'nye Zabolevaniya. Labor Hygiene and Occupational Diseases. (V/O Mezhdunarodnaya Kniga, 113095 Moscow, USSR) V.1-36, 1957-1992. For publisher information, see MTPEEI CODEN Reference: 24(3),25,1980.* Timofeevshaia LA, Ivanova NI, Balinina ES. 1980. Toxicology of O-phthalate acid esters and hygiene reglamentation. Gigiena Truda i Professional'nye Zabolevaniya 24(3):25-27.
Diethyl phthalate	8600	10100	8920 - 11280	NA	rats; 220 +/- 40 g	NA	oral; intragastric	NA	NA	(source of information not provided)	NA	Izmerov NF, Sanotsky IV, Sidorov KK. 1982. Toxicometric Parameters of Industrial Toxic Chemicals under Single Exposure. International Register of Potentially Toxic Chemicals (IRPTC). United Nations Environment Programme (UNEP). Centre of International Projects, GKNT. Moscow, Russia.
Digoxin	28.3	28.27	24.85 - 32.17 (limits of error [P=0.95])	Probit method	rats; 250-310 g	male and female (equal numbers)	oral	NA	mortality rate computed 7 days after administration	3 or 4 groups of 10; 30 - 40 rats used; fasted overnight	NA	**RTECS REFERENCE** *CODEN: AIPTAK Bibliographic Data: Archives Internationales de Pharmacodynamie et de Therapie. (Heymans Institute of Pharmacology, DePintelaan 185, B-9000 Ghent, Belgium) V.4- 1898- CODEN Reference: 164,47,1966.* ------- Georges A, Page J, Duvernay G. 1966. Cardiotonic properties of formiloxin: a semi-synthetic cardiac glycoside. Arch Int Pharmacodyn 164(1):47-55. *Research Dept., A. Christiaens, S.A., Brussels, Belgium*
Dimethylformamide	2800	1425 (1.5 mL/kg; converted to mg/kg using density = 0.950)	855 - 2565 (95% CL; 0.9 - 2.7 mL/kg; converted to mg/kg using density = 0.950)	Litchfield and Wilcoxon method and probit analysis	Sprague-Dawley rats; 16-50 g; 14 days	male and female	oral	solvent used in undiluted form	animals observed for a week after medication	nonfasted rats; 6-12 rats of both sexes used for studies; solvent used in undiluted form	analytical grade meeting A.C.S. specifications	Kimura ET, Ebert DM, Dodge PW. 1971. Acute toxicity and limits of solvent residue for sixteen organic solvents. Toxicol Appl Pharmacol 19:699-704. *Abbott Laboratories, Chicago, IL*
Dimethylformamide	2800	> 2000	NA	acceptable methods (e.g., Bliss, Litchfield and Wilcoxon, Weil, Thompson, etc.)	Sprague-Dawley rats	male and female	oral gavage	single dose	14 day observation; toxicity symptoms: Ptosis, posture, respiratory effects, lethargy, abnormal gait, tremors, convulsions, prostrate coma; time to onset of signs --; duration of signs -- no signs reported; 0 rats dead (average per test)	3 dose levels (5 male and 5 female each); 30 rats used; OECD TG401 (1981) followed for experimental procedures	NA	Vandenheuvel MJ, Clark DG, Fielder RJ, Koundakjian PP, Oliver GJA, Pelling D, Tomlinson NJ, Walker AP. 1990. Jul. The International Validation Of A Fixed-Dose Procedure As An Alternative To The Classical LD50 Test Food And Chemical Toxicology 28(7):469-482.

CHEMICAL[1]	LD50[2] mg/kg oral rat RTECS 2002	LD50[3] mg/kg oral rat Primary Reference	LD50[4] mg/kg (range) Primary Reference	LD50 CALCULATION METHOD[5] Primary Reference	ANIMAL INFORMATION (stock, weight, age)	GENDER	ROUTE/ METHOD OF EXPOSURE[6]	DOSE	OBSERVATIONS	NOTES	CHEMICAL SOURCE	PRIMARY REFERENCE
Dimethylformamide	2800	2800	NA	NA	rats	NA	oral	NA	NA	NA	NA	**RTECS REFERENCE** *CODEN: ZEKBAI Bibliographic Data: Zeitschrift fuer Krebsforschung. (Berlin, Fed. Rep. Ger.) V.1-75, 1903-71. For publisher information, see JCROD7. CODEN Reference: 69,103,1967.* ---- Druckery H, Preussmann R, Ivankovic S, Schmahl D. 1966. Organotrope carcinogene Wirkungen bei 65 verschiedenen N-Nitroso-Verbindungen an BD-Ratten. Zeitschrift fur Krebsforschung 69:103-201.
Dimethylformamide	2800	3990 (4.2 mL/kg; converted to mg/kg using density = 0.950)	2565 - 6270 (95% CL; 2.7 - 6.6 mL/kg; converted to mg/kg using density = 0.950)	Litchfield and Wilcoxon method and probit analysis	Sprague-Dawley rats; 80-160 g; young adult	male	oral	solvent used in undiluted form	animals observed for a week after medication	nonfasted rats; groups of 6 rats used for the studies; solvent used in undiluted form	analytical grade meeting A.C.S. specifications	Kimura ET, Ebert DM, Dodge PW. 1971. Acute toxicity and limits of solvent residue for sixteen organic solvents. Toxicol Appl Pharmacol 19:699-704. *Abbott Laboratories, Chicago, IL*
Dimethylformamide	2800	5800	+/- 1200	NA	rats; 220 +/- 40 g	NA	oral; intragastric	NA	NA	(source of information not provided)	NA	Izmerov NF, Sanotsky IV, Sidorov KK. 1982. Toxicometric Parameters of Industrial Toxic Chemicals under Single Exposure. International Register of Potentially Toxic Chemicals (IRPTC). United Nations Environment Programme (UNEP). Centre of International Projects, GKNT. Moscow, Russia.
Dimethylformamide	2800	6840 (7.2 mL/kg; sp. density = 0.950; convert LD50 to mg/kg)	5700 - 8170 (95% CL; 6.0 - 8.6 mL/kg; sp. density is 0.950; convert LD50 to mg/kg)	Litchfield and Wilcoxon method and probit analysis	Sprague-Dawley rats; 300-470 g; older adult	male	oral	solvent used in undiluted form	animals observed for a week after medication	nonfasted rats; groups of 6 rats used for the studies; solvent used in undiluted form	analytical grade meeting A.C.S. specifications	Kimura ET, Ebert DM, Dodge PW. 1971. Acute toxicity and limits of solvent residue for sixteen organic solvents. Toxicol Appl Pharmacol 19:699-704. *Abbott Laboratories, Chicago, IL*
Dimethylformamide	2800	7000	NA	based on assumption that probit mortality vs log dose has same slope as similar chemical	Sherman rats; 90-120 g; 4-5 weeks	male	oral gastric intubation	in aqueous solution; doses (in g/kg) differ by 1 log to bracket LD50, then refine LD50 with doses in a series of antilog 1.1, 1.3, 1.5, etc	LD50 based on mortalities during a 14 day period	6 rats/dose at doses that differ by 1 log to bracket LD50 (given 1 week apart); then refined LD50 with 10 rats/dose in a dose series of antilog 1.1, 1.3, 1.5, etc.; assumed to use materials/methods of Smyth & Carpenter (1944) except for reported changes	reagent grade	Smyth HF Jr, Carpenter CP. 1948. Further experience with the range finding test in the industrial toxicology laboratory. J Ind Hyg Toxicol 30: 63-68. **(LD50 value)** Smyth HF Jr, Carpenter CP. 1944. The place of the range-finding test in the industrial toxicology laborotory. J Ind Hyg Toxicol 26:269-273. (most materials/methods)
Dimethylformamide	2800	7182 (7.6 mL/kg; sp. density listed as 0.945; convert LD50 to mg/kg)	6804 - 7655 (95% CL; 7.2 - 8.1 mL/kg; sp. density listed as 0.945; convert LD50 to mg/kg; slope = 1.11)	Finney (1962) Probit Analysis	Sprague-Dawley SPF rats; 170-230 g	male and female	oral; stomach tube	diluted in 0.9% saline; 20 - 30 mL/kg dose	observed up to 7 days after administration; all deaths occurred within 24 hour	10 animals per dose (5 male, 5 female)	pure DMF	Bartsch W, Sponer G, Dietmann K, Fuchs G. 1976. Acute toxicity of various solvents in the mouse and rat. LD50 of ethanol, diethylacetamide, dimethylformamide, dimethylsulfoxide, glycerine, N-methylpyrrolidone, polyethylene glycol 400, 1,2- propanediol and Tween 20. Arzneimittelforschung 26(8):1581-1583.
Diquat dibromide	231	231	NA	NA	rats	NA	oral	NA	NA	assumed to be the value from Clark & Hurst 1970	NA	**RTECS REFERENCE** *CODEN: PEMNDP Bibliographic Data: Pesticide Manual. (The British Crop Protection Council, 20 Bridport Rd., Thornton Heath CR4 7QG, UK) V.1- 1968- CODEN Reference: 9,316,1991.*
Diquat dibromide	231	121	108 - 136 (95% CL; slope = 12.2)	Litchfield and Wilcoxon method (1949)	Sherman strain rats (SPF); min. wt. = 200 g; min. age of 90 days	female	oral; stomach tube	chemical in peanut oil; 0.005 mL/g of bw	observed for at least 14 days after dosing or until recovered from signs of toxicity	40 rats used; min. of 10 animals per group tested	technical grade	Gaines TB, Linder RE. 1986. Acute toxicity of pesticides in adult and weanling rats. Fundam Appl Toxicol 7(2):299-308. *Health Effects Research Laboratory, U.S. EPA, Research Triangle Park, NC*
Diquat dibromide	231	147	138 - 155 (95% CL; slope = 22.5)	Litchfield and Wilcoxon method (1949)	Sherman strain rats (SPF); min. wt. = 175 g; min. age of 90 days	male	oral; stomach tube	chemical in peanut oil; 0.005 mL/g of bw	observed for at least 14 days after dosing or until recovered from signs of toxicity	40 rats used; min. of 10 animals per group tested	technical grade	Gaines TB, Linder RE. 1986. Acute toxicity of pesticides in adult and weanling rats. Fundam Appl Toxicol 7(2):299-308. *Health Effects Research Laboratory, U.S. EPA, Research Triangle Park, NC*
Diquat dibromide	231	231 (diquat ion per kg bw)	194 - 274 (95% CL)	Thompson (1947); moving average interpolation method	Alderly Park albino rats (SPF); 180-200 g; young, mature	female	oral; stomach tube	chemical dissolved in water or physiological saline	observed for 14 days; lethargy, weight loss, respiratory difficulty	NA	99% pure diquat dichloride or diquat dibromide	Clark DG, Hurst EW. 1970. The toxicity of diquat. Br J Ind Med Jan;27(1):51-55. *Imperial Chemical Industries Limited, Cheshire, UK*
Disulfoton	2.6	2.3	1.7 - 3.1 (95% CL)	Litchfield and Wilcoxon method (1949)	Sherman strain rats; min. wt. = 200 g; min. age of 90 days	female	oral; stomach tube	chemical in peanut oil; 0.005mL/g of bw	observed hourly on first day of dosage and twice a day thereafter until time of death; max survival 3 days	50 rats tested	technical grade	Gaines TB. 1969. Acute toxicity of pesticides. Toxicol Appl Pharmacol 14(3): 515-34. *U.S. Dept. of Health, Education, and Welfare, Atlanta, GA*
Disulfoton	2.6	2.6	NA	estimated by the logarithm-probability method	Sprague-Dawley rats; 175 - 225 g	female	NA	dissolved in 10% ETOH, 90% propylene glycol; strength of solutions adjusted so that less than 0.3% bw was administered to the rats	animals observed for 10 days; death or complete recovery occurred within this time; acute toxic dose symptoms typical of those produced by cholinergic organic phosphates; single doses produced effects resembling those resulting from excessive stimulation of the central nervous system, the patasympathetic nervous system and somatic motor nerves; after lethal doses death usually occurred within 48 hour	25 rats used	Chemagro Corp., New York	Bombinski TJ, Dubois KP. 1958. Toxicity and mechanism of action of Di-syston. AMA Arch Ind Health 17:192-199.

CHEMICAL[1]	LD50[2] mg/kg oral rat RTECS 2002	LD50[3] mg/kg oral rat Primary Reference	LD50[4] mg/kg (range) Primary Reference	LD50 CALCULATION METHOD[5] Primary Reference	ANIMAL INFORMATION (stock, weight, age)	GENDER	ROUTE/ METHOD OF EXPOSURE[6]	DOSE	OBSERVATIONS	NOTES	CHEMICAL SOURCE	PRIMARY REFERENCE
Disulfoton	2.6	2.6	NA	NA	rats	female	oral	NA	NA	reference is a review article in Japanese; this LD50 value is assumed to be from Bombinski and Dubois 1958	NA	**RTECS REFERENCE** *CODEN: YKYUA6 Bibliographic Data: Yakkyoku. Pharmacy. (Nanzando, 4-1-11, Yushima, Bunkyo-ku, Tokyo, Japan) V.1- 1950- CODEN Reference: 37,717,1986.*
Disulfoton	2.6	3.2	3.0 - 3.3 (95% CL)	NA	Hindustan Antibiotics strain rats; adult	female	oral	1 - 10 mg/kg doses; 6 different dose levels	acute 24 hour LD50 determination; percent mortality given for different timepoints within the 24 hour period; pretreatment of rats reduced mortality in some cases	overnight fasted; rats pretreated with one of the following: saline, oil, phenobarbital, 3-methyl-cholanthourene, nickel chloride, cobalt chloride, cycloheximide or ethylmorphine; reference doesn't adequately define which rats received what and if all data were used in LD50 determinations	NA	Pawar SS, Fawade MM. 1978. Alterations in the toxicity of thiodemeton due to the pretreatment of inducers, substrate, and inhibitors of mixed function oxidase system. Bull Environ Contam Toxicol 20:805-810. *Marathwada University, India*
Disulfoton	2.6	6.8	5.9 - 7.8 (95% CL)	Litchfield and Wilcoxon method (1949)	Sherman strain rats; min. wt. = 175 g; min age of 90 days	male	oral; stomach tube	chemical in peanut oil; 0.005mL/g of bw	observed hourly on first day of dosage and twice a day thereafter until time of death; max survival 2 days	69 rats tested	technical grade	Gaines TB. 1969. Acute toxicity of pesticides. Toxicol. Appl. Pharmacol. 14(3):515-34. *U.S. Dept. of Health, Education, and Welfare, Atlanta, GA*
Disulfoton	2.6	7.2	7.0 - 7.3 (95% CL)	NA	Hindustan Antibiotics strain rats; adult	male	oral	1 - 10 mg/kg doses; 6 different dose levels	acute 24 hour LD50 determination; percent mortality given for different timepoints within the 24 hour period; pretreatment of rats reduced mortality in some cases	overnight fasted; rats pretreated with one of the following: saline, oil, phenobarbital, 3-methyl-cholanthourene, nickel chloride, cobalt chloride, cycloheximide or ethylmorphine; reference doesn't define which rats received what and if all data were used in LD50 determinations	NA	Pawar SS, Fawade MM. 1978. Alterations in the toxicity of thiodemeton due to the pretreatment of inducers, substrate, and inhibitors of mixed function oxidase system. Bull Environ Contam Toxicol 20:805-810. *Marathwada University, India*
Disulfoton	2.6	12.6	NA	estimated by the logarithm-probability method	Sprague-Dawley rats; 175-225 g	male	NA	dissolved in 10% ETOH, 90% propylene glycol; strength of solutions adjusted so that less than 0.3% bw was administered to the rats	animals observed for 10 days; death or complete recovery occurred within this time; acute toxic dose symptoms typical of those produced by cholinergic organic phosphates; single doses produced effects resembling those resulting from excessive stimulation of the central nervous system, the patasympathetic nervous system and somatic motor nerves; after lethal doses death usually occurred within 48 hour	39 rats used	Chemagro Corp., New York	Bombinski TJ, Dubois KP. 1958. Toxicity and mechanism of action of Di-syston. AMA Arch Ind Health 17:192-199.
Endosulfan	18	18	NA	NA	NA	NA	NA	NA	NA	assumed to be the values from Gaines 1969	NA	**RTECS REFERENCE** CODEN: ARSIM* Bibliographic Data: Agricultural Research Service, USDA Information Memorandum. (Beltsville, MD 20705) CODEN Reference: 20.9.1966.
Endosulfan	18	18	15 - 21 (95% CL)	Litchfield and Wilcoxon method (1949)	Sherman strain rats; min wt. = 200 g; min age of 90 days	female	oral; stomach tube	chemical in peanut oil; 0.005 mL/g of bw	observed hourly on first day of dosage and twice a day thereafter until time of death; max survival 2 days	60 rats tested	technical grade	Gaines TB. 1969. Acute toxicity of pesticides. Toxicol Appl Pharmacol 14(3):515-34. *U.S. Dept. of Health, Education, and Welfare, Atlanta, GA*
Endosulfan	18	43	41 - 46 (95% CL)	Litchfield and Wilcoxon method (1949)	Sherman strain rats; min wt. = 175 g; min age of 90 days	male	oral; stomach tube	chemical in peanut oil; 0.005 mL/g of bw	observed hourly on first day of dosage and twice a day thereafter until time of death; max survival 5 days	70 rats tested	technical grade	Gaines TB. 1969. Acute toxicity of pesticides. Toxicol Appl Pharmacol 14(3):515-34. *U.S. Dept. of Health, Education, and Welfare, Atlanta, GA*
Epinephrine bitartrate	no rat oral data from RTECS	4 (mouse - oral)	+/- 1	NA	NA	NA	NA	NA	observed for 5 days	NA	NA	**RTECS REFERENCE—MOUSE ORAL** *CODEN: APTOA6 Bibliographic Data: Acta Pharmacologica et Toxicologica. (Copenhagen, Denmark) V.1-59, 1945-86. For publisher information, see PHTOEH CODEN Reference: 31,49,1972.*
Ethanol	7060	6162 (7.8 mL/kg; converted to mg/kg using density of 0.790)	4977 - 7663 (95% CL; 6.3 - 9.7 mL/kg)	Litchfield and Wilcoxon method and probit analysis	Sprague-Dawley rats; (16-50 g); 14 days	male and female	oral	solvent used in undiluted form	animals observed for a week after medication	nonfasted rats; 6-12 rats of both sexes used for studies; solvent used in undiluted form	analytical grade meeting A.C.S. specifications	Kimura ET, Ebert DM, Dodge PW. 1971. Acute toxicity and limits of solvent residue for sixteen organic solvents. Toxicol Appl Pharmacol 19:699-704. *Abbott Laboratories, Chicago, IL*
Ethanol	7060	7060	6670 - 7460 (95% CL)	moving average of Weil (1952) or Litchfield and Wilcoxon method (1949)	Wistar albino rats; old adult; 11-12 months	male	oral	dose interval 1.1; ethanol concentration of 40% w/v	acute (24 hour) toxicity; respiratory failure	fasted overnight; 6 - 8 grouped of 10 rats each	NA	**RTECS REFERENCE** *CODEN: TXAPA9 Bibliographic Data: Toxicology and Applied Pharmacology. (Academic Press, Inc., 1 E. First St., Duluth, MN 55802) V.1- 1959- CODEN Reference: 16,718,1970.* --- Wiberg GS, Trenholm HL, Coldwell BB. 1970. Increased ethanol toxicity in old rats: changes in LD50, in vivo and in vitro metabolism, and liver alcohol dehydrogenase activity. Toxicol Appl Pharmacol May 16(3):718-727. *Dept. of National Health and Welfare, Ottawa, Canada*
Ethanol	7060	7400	NA	NA	rats; 150-250 g; 70-100 days	male (predominately)	oral	NA	observed for 6 days	18 hour fasting before dosing	NA	Welch H, Slocum GG. 1943. Relation of length of carbon chain to the primary and functional toxicities of alcohols. J Lab Chem Med 28:1440-1445. *U.S. FDA, Washington, D.C.*

CHEMICAL[1]	LD50[2] mg/kg oral rat RTECS 2002	LD50[3] mg/kg oral rat Primary Reference	LD50[4] mg/kg (range) Primary Reference	LD50 CALCULATION METHOD[5] Primary Reference	ANIMAL INFORMATION (stock, weight, age)	GENDER	ROUTE/ METHOD OF EXPOSURE[6]	DOSE	OBSERVATIONS	NOTES	CHEMICAL SOURCE	PRIMARY REFERENCE
Ethanol	7060	10600	10000 - 11200 (95% CL)	Litchfield and Wilcoxon method (1949) or moving average of Weil (1952)	Wistar albino rats; young adult; 100 days	male	oral	dose interval 1.1; ethanol concentration of 40% w/v	acute (24 hour) toxicity; respiratory failure	fasted overnight; 6 - 8 grouped of 10 rats each	NA	Wiberg GS, Trenholm HL, Coldwell BB. 1970. Increased ethanol toxicity in old rats: changes in LD50, in vivo and in vitro metabolism, and liver alcohol dehydrogenase activity. Toxicol. Appl. Pharmacol. May. 16(3):718 727. *Dept. of National Health and Welfare, Ottawa, Canada*
Ethanol	7060	11290 - A 11204 - B (A = 14.31 mL/kg; B = 14.20 mL/kg; used density of 0.789 to convert to mg/kg)	NA	A: Behrens (1929) B: Bliss (1938)	rats	NA	oral	NA	NA	40 - 90 animals used; NICEATM used value B since authors stated it was more accurate	NA	Deichmann WB, Mergard EG. 1948. Comparative evaluation of methods employed to express the degree of toxicity of a compound. J Ind Hyg Toxicol 30:373-378. *Albany Medical College, Albany, NY; University of Cincinnati, Cincinnati, OH*
Ethanol	7060	11534 (14.6 mL/kg; used density of 0.790 to convert to mg/kg)	10112 - 13193 (95% CL; 12.8 - 16.7 mL/kg)	Litchfield and Wilcoxon method and probit analysis	Sprague-Dawley rats; 300-470 g; older adult	male	oral	solvent used in undiluted form	animals observed for a week after medication	nonfasted rats; groups of 6 rats used for the studies; solvent used in undiluted form	analytical grade meeting A.C.S. specifications	Kimura ET, Ebert DM, Dodge PW. 1971. Acute toxicity and limits of solvent residue for sixteen organic solvents. Toxicol Appl Pharmacol 19:699-704. *Abbott Laboratories, Chicago, IL*
Ethanol	7060	13660	11170 - 16710 (95% probability; +/- 1.96 S.D.; slope = 4.57)	probits (Bliss)	Wistar albino rats; 90-120 g	male	oral; stomach tube; single doses	50% concentration in water; largest dose given was 50 g/kg	most deaths occurred in 2 days; all deaths occurred in 14 days	groups of 10 animals; 10 animals per dose	purified commercial grade	Smyth HF Jr, Seaton J, Fischer, L. 1941. The single dose toxicity of some glycols and derivatives. J Ind Hyg Toxicol 23:259-268. *Mellon Institute, Pittsburgh, PA* (This was the value used by the RC [from 1977 RTECS]).
Ethanol	7060	15543 (19.7 mL/kg; used density of 0.789 to convert to mg/kg)		Thompson method; Weil tables	Carworth-Wistar rats; 90-120 g; 4-5 weeks	male	oral gastric intubation	in aqueous solution; concentration intubated = 10 mg/mL; dosages arranged in a logarithmic series differing by a factor of 2	LD50 based on mortalities during a 14 day period	non-fasted; groups of 5 rats; single oral dose toxicity	reagent grade	Smyth HF, Weil CS, West JS, Carpenter CP. 1970. An exploration of joint toxic action:II. Equitoxic versus equivolume mixtures. Toxicol Appl Pharmacol 17:498-503. (LD50 value) Smyth HF Jr., Carpenter CP., Weil CS., Pozzani, UC., Striegel, JA. And Nycum, JS. 1969. Range-finding toxicity data: List VII. Am Ind Hyg Assoc J 30:470-476. *Carnegie-Mellon University, Pittsburgh, PA* Smyth HF Jr., Carpenter CP., Weil CS., Pozzani, UC., and Striegel, JA. 1962. Range-finding toxicity data: List VI. Am Ind Hyg Assoc J 23:95-107. *Mellon Institute of Industrial Research, Pittsburg, PA* (experimental parameters)
Ethanol	7060	17775 (22.5 mL/kg; used density of 0.790 to convert to mg/kg)	14852 - 21330 (95% CL; 18.8 - 27.0 mL/kg)	Litchfield and Wilcoxon method and probit analysis	Sprague-Dawley rats; 80-160 g); young adult	male	oral	solvent used in undiluted form	animals observed for a week after medication	nonfasted rats; groups of 6 rats used for the studies; solvent used in undiluted form	analytical grade meeting A.C.S. specifications	Kimura ET, Ebert DM, Dodge PW. 1971. Acute toxicity and limits of solvent residue for sixteen organic solvents. Toxicol Appl Pharmacol 19:699-704. *Abbott Laboratories, Chicago, IL*
Ethylene glycol	4700	4000	3100 - 5200 (95% CI; slope = 258)	Litchfield and Wilcoxon method	Fischer 344 (COB CD F/Crl BR) rats; 150-200 g; 12-14 weeks	female	oral intubation	0.1 log dosages with 5 rats per level	animals observed for mortality daily for 14 days	fasted overnight; no dosage exceeded 24 g/kg bw; LD50 and 95% confidence limits calculated at 24 hour post-treatment; no deaths beyond 72 hour post-treatment	Aldrich Chemical Co., high purity; > 99% ethylene glycol	Clark CR, Marshall TC, Merickel BS, et al. 1979. Toxicological assessment of heat transfer fluids proposed for use in solar energy applications. Toxicol Appl Pharmacol 5(1):529-535. *Inhalation Toxicology Research Institute, Lovelace Biomedical and Environmental research Institute, Alburquerque, NM*
Ethylene glycol	4700	4700	NA		rats	NA	oral	NA	NA	reference in intranslated Russian; same reference was cited in 1983/84 RTECs, but this is not the LD50 used by RC (ZEBET did not provide the reference)	NA	**RTECS REFERENCE-RUSSIAN** *CODEN: GTPZAB Bibliographic Data: Gigiena Truda i Professional'nye Zabolevaniya. Labor Hygiene and Occupational Diseases. (V/O MezhdunarodnayaKniga, 113095 Moscow, USSR) V.1-36, 1957-1992. For publisher information, see MTPEEI CODEN Reference: 26(6),28, 1982.* ---- Filatova VS, Smirkova ES. 1982. Derivation of the maximum permissable concentration of ethylen glycol in the air of worksites. Gigiena Truda i Professional'nye Zabolevaniya. 26(6):28-30
Ethylene glycol	4700	>5000	NA	NA	Holzman Sprague-Dawley rats	male	oral gavage	50 mg/kg, 500 mg/kg, and 5000 mg/kg in corn oil	clinical observations included depression, labored breathing, emaciation, and alopecia	3 groups of 10 males; no mortalities were observed	NA	from EPA TSCATS database; Acute Toxicity Study in Rats Administered 10 Materials (final report) with Cover Letter dated 062669, (1969), EPA Doc. No. 40-6942188, Fiche No. OTS0519234; *FMC Corporation*
Ethylene glycol	4700	5890 (5.28 cc/kg; converted to mg/kg using density of 1.1155)	5053 - 7106 (95% probability; 4.53 - 6.37 cc/kg)	probits (Bliss)	rats from the same strain; 275 +/- 25 g; 3 months +/- 9 days	NA	oral; stomach tube; single doses	single doses; 3904 mg/kg--7028 mg/kg; log doses 0.544, 0.608, 0.672, 0.735, 0.799; diluted 1 + 3	most deaths occurred in 1 - 5 days; weakness and lack of muscular coordination; no deaths per dose: 3904 mg/kg -- 2/11; 4440 mg/kg -- 3/11; 5243 mg/kg -- 3/11; 6057 mg/kg -- 5/11; 7028 mg/kg -- 8/11	5 doses for 11 animals each dose; 55 rats used	NA	Laug EP, Calvery HO, Morris HJ, Woodard G. 1939. The toxicology of some glycols and derivatives. J Ind Hyg Toxicol 21:173-201. *Division of Pharmacology, Food and Drug Administration, U.s. Dept. of Agriculture, Washington, D.C.*
Ethylene glycol	4700	6135 (5.50 cc/kg; converted to mg/kg using density of 1.1155)	5578 - 6749 (95% probability; 5.00 - 6.05 cc/kg)	probits (Bliss)	rats from different sources; 175-325 g	male and female (~ equal)	oral; stomach tube; single doses	single doses; 3904 mg/kg -- 8366 mg/kg	most deaths occurred in 1 - 5 days; weakness and lack of muscular coordination; no deaths per dose: 3904 mg/kg - 0/7; 4462 mg/kg - 4/20; 5020 mg/kg - 3/10; 5578 mg/kg - 11/20; 6135 mg/kg - 15/20; 6693 mg/kg - 4/10; 6972 mg/kg - 7/10; 7251 mg/kg - 2/10; 7809 mg/kg - 13/20; 8366 mg/kg - 17/20	rats fasted for about 18 hours; 147 rats used; 76 died	NA	Laug EP, Calvery HO, Morris HJ, Woodard G. 1939. The toxicology of some glycols and derivatives. J Ind Hyg Toxicol 21:173-201. *Division of Pharmacology, Food and Drug Administration, U.s. Dept. of Agriculture, Washington, D.C.*

CHEMICAL[1]	LD50[2] mg/kg oral rat RTECS 2002	LD50[3] mg/kg oral rat Primary Reference	LD50[4] mg/kg (range) Primary Reference	LD50 CALCULATION METHOD[5] Primary Reference	ANIMAL INFORMATION (stock, weight, age)	GENDER	ROUTE/ METHOD OF EXPOSURE[6]	DOSE	OBSERVATIONS	NOTES	CHEMICAL SOURCE	PRIMARY REFERENCE
Ethylene glycol	4700	6500	NA	Thompson (1947) and Weil (1952); moving average tables	Manor farms Wistar rats; 150-200 g	male	oral; stomach intubation;	single dose; geometric factor between dosage levels=2; undiluted	14 day observation	5 rats per dosage level; fasted overnight	NA	Weil CS, Wright GJ. 1967. Intra- and Interlaboratory Comparative Evaluation of Single Oral Test. Toxicology and Applied Pharmacology 11:378-388. *Mellon Institute, Pittsburgh, PA and The Dow Chemical Company, Midland, MI*
Ethylene glycol	4700	6537 (5.86 cc/kg; converted to mg/kg using density of 1.1155)	5064 - 8455 (95% probability; 4.54 - 7.58 cc/kg)	probits (Bliss)	rats from the same strain; 275 +/- 25 g; 3 months +/- 9 days		oral; stomach tube; single doses	single doses; 3904 mg/kg -- 7028 mg/kg; log doses 0.544, 0.608, 0.672, 0.735, 0.799; undiluted	most deaths occurred in 1 - 5 days; weakness and lack of muscular coordination; no deaths per dose: 3904 mg/kg -- 2/11; 4440 mg/kg -- 2/11; 5243 mg/kg -- 4/11; 6057 mg/kg -- 5/11; 7028 mg/kg -- 6/11	5 doses for 11 animals each dose; 55 rats used	NA	Laug EP, Calvery HO, Morris HJ, Woodard G. 1939. The toxicology of some glycols and derivatives. J Ind Hyg Toxicol 21:173-201. *Division of Pharmacology, Food and Drug Administration, U.s. Dept. of Agriculture, Washington, D.C.*
Ethylene glycol	4700	6860	NA	Thompson (1947) and Weil (1952); moving average tables	Manor farms Wistar rats; 150-200 g	male	oral; stomach intubation	single dose; geometric factor between dosage levels = 2; undiluted	14 day observation	5 rats per dosage level; fasted overnight	NA	Weil CS, Wright GJ. 1967. Intra- and Interlaboratory Comparative Evaluation of Single Oral Test. Toxicology and Applied Pharmacology 11:378-388. *Mellon Institute, Pittsburgh, PA and The Dow Chemical Company, Midland, MI*
Ethylene glycol	4700	7460	NA	Thompson (1947) and Weil (1952); moving average tables	Manor farms Wistar rats; 150-200 g	male	oral; stomach intubation	single dose; geometric factor between dosage levels = 2; undiluted	14 day observation	5 rats per dosage level; fasted overnight	NA	Weil CS, Wright GJ. 1967. Intra- and Interlaboratory Comparative Evaluation of Single Oral Test. Toxicology and Applied Pharmacology 11:378-388. *Mellon Institute, Pittsburgh, PA and The Dow Chemical Company, Midland, MI*
Ethylene glycol	4700	7887 (7.07 mL/kg; converted to mg/kg using density of 1.1155)	NA	Thompson method; Weil tables	Carworth-Wistar rats; 90-120 g; 4-5 weeks	male	oral gastric intubation	in aqueous solution; concentration intubated = 10 mg/mL; dosages arranged in a logarithmic series differing by a factor of 2	LD50 based on mortalities during a 14 day period	non-fasted; groups of 5 rats; single oral dose toxicity	reagent grade	Smyth HF, Weil CS, West JS, Carpenter CP. 1970. An exploration of joint toxic action:II. Equitoxic versus equivolume mixtures. Toxicol Appl Pharmacol 17:498-503. (LD50 value) Smyth HF Jr., Carpenter CP., Weil CS., Pozzani, UC., Striegel, JA. And Nycum, JS. 1969. Range-finding toxicity data: List VII. Am Ind Hyg Assoc J 30:470-476. *Carnegie-Mellon University, Pittsburgh, PA* Smyth HF Jr., Carpenter CP., Weil CS., Pozzani, UC., and Striegel, JA. 1962. Range-finding toxicity data: List VI. Am Ind Hyg Assoc J 23:95-107. *Mellon Institute of Industrial Research, Pittsburg, PA* (experimental parameters)
Ethylene glycol	4700	8000	NA	Thompson (1947) and Weil (1952); moving average tables	Manor farms Wistar rats; 150-200 g	male	oral; stomach intubation	single dose; geometric factor between dosage levels = 2; undiluted	14 day observation	5 rats per dosage level; fasted overnight	NA	Weil CS, Wright GJ. 1967. Intra- and Interlaboratory Comparative Evaluation of Single Oral Test. Toxicology and Applied Pharmacology 11:378-388. *Mellon Institute, Pittsburgh, PA and The Dow Chemical Company, Midland, MI*
Ethylene glycol	4700	8120	NA	Thompson (1947) and Weil (1952); moving average tables	Manor farms Wistar rats; 150-200 g	male	oral; stomach intubation	single dose; geometric factor between dosage levels = 2; undiluted	14 day observation	5 rats per dosage level; fasted overnight	NA	Weil CS, Wright GJ. 1967. Intra- and Interlaboratory Comparative Evaluation of Single Oral Test. Toxicology and Applied Pharmacology 11:378-388. *Mellon Institute, Pittsburgh, PA and The Dow Chemical Company, Midland, MI*
Ethylene glycol	4700	8480	NA	Thompson (1947) and Weil (1952); moving average tables	Manor farms Wistar rats; 150-200 g	male	oral; stomach intubation	single dose; geometric factor between dosage levels = 2; undiluted	14 day observation	5 rats per dosage level; fasted overnight	NA	Weil CS, Wright GJ. 1967. Intra- and Interlaboratory Comparative Evaluation of Single Oral Test. Toxicology and Applied Pharmacology 11:378-388. *Mellon Institute, Pittsburgh, PA and The Dow Chemical Company, Midland, MI*
Ethylene glycol	4700	8540	7310 - 9990 (95% probability; +/- 1.96 S.D.; slope = 5.71)	probits (Bliss)	Wistar albino rats; 90-120 g	male	oral; stomach tube; single doses	50% concentration in water; largest dose given was 50 g/kg	most deaths occurred in 2 days; all deaths occurred in 14 days	groups of 10 animals; 10 animals per dose	commercial grade	Smyth HF Jr, Seaton J, Fischer L. 1941. The single dose toxicity of some glycols and derivatives. J Ind Hyg Toxicol 23:259-268. *Mellon Institute, Pittsburgh, PA.* (This is the value used by the RC [from 1981/82 RTECS]).
Ethylene glycol	4700	9058 (8.12 mL/kg; converted to mg/kg using density of 1.1155)	NA	Thompson method; Weil tables	Carworth-Wistar rats; 90-120 g; 4-5 weeks	male	oral gastric intubation	in aqueous solution; concentration intubated = 10 mg/mL; dosages arranged in a logarithmic series differing by a factor of 2	LD50 based on mortalities during a 14 day period	non-fasted; groups of 5 rats; single oral dose toxicity	reagent grade	Smyth HF, Weil CS, West JS, Carpenter CP. 1970. An exploration of joint toxic action:II. Equitoxic versus equivolume mixtures. Toxicol Appl Pharmacol 17:498-503. (LD50 value) Smyth HF Jr., Carpenter CP., Weil CS., Pozzani, UC., Striegel, JA. And Nycum, JS. 1969. Range-finding toxicity data: List VII. Am Ind Hyg Assoc J 30:470-476. *Carnegie-Mellon University, Pittsburgh, PA* Smyth HF Jr., Carpenter CP., Weil CS., Pozzani, UC., and Striegel, JA. 1962. Range-finding toxicity data: List VI. Am Ind Hyg Assoc J 23:95-107. *Mellon Institute of Industrial Research, Pittsburg, PA* (experimental parameters)
Ethylene glycol	4700	9850	NA	Thompson (1947) and Weil (1952); moving average tables	Manor farms Wistar rats; 150-200 g	male	oral; stomach intubation	single dose; geometric factor between dosage levels = 2; undiluted	14 day observation	5 rats per dosage level; fasted overnight	NA	Weil CS, Wright GJ. 1967. Intra- and Interlaboratory Comparative Evaluation of Single Oral Test. Toxicology and Applied Pharmacology 11:378-388. *Mellon Institute, Pittsburgh, PA and The Dow Chemical Company, Midland, MI*
Ethylene glycol	4700	9900	NA	Thompson (1947) and Weil (1952); moving average tables	Manor farms Wistar rats (SPF); 150-200 g	male	oral; stomach intubation	single dose; geometric factor between dosage levels = 2; undiluted	14 day observation	5 rats per dosage level; fasted overnight	NA	Weil CS, Wright GJ. 1967. Intra- and Interlaboratory Comparative Evaluation of Single Oral Test. Toxicology and Applied Pharmacology 11:378-388. *Mellon Institute, Pittsburgh, PA and The Dow Chemical Company, Midland, MI*
Ethylene glycol	4700	> 10000	NA	NA	Sprague-Dawley rats	female	oral; gavage	single dose; 1250, 2500, 5000, 10000 mg/kg doses	14 day observation; no rats died	ethylene glycol engine coolant; test material is 50/50 (vol.) ethylene glycol and water mix with 1.5 oz./gal of DCA inhibitor	NA	from EPA TSCATS database; Initial Submission: Acute Toxicological Properties & Handling Hazards With Ethylene Glycol Tested In Rats (Final Report) With Cover Letter Dated 051492; EPA Doc. No. 88-920003189 Fiche No OTS0539777. *The Dow Chemical Co.*

CHEMICAL[1]	LD50[2] mg/kg oral rat RTECS 2002	LD50[3] mg/kg oral rat Primary Reference	LD50[4] mg/kg (range) Primary Reference	LD50 CALCULATION METHOD[5] Primary Reference	ANIMAL INFORMATION (stock, weight, age)	GENDER	ROUTE/ METHOD OF EXPOSURE[6]	DOSE	OBSERVATIONS	NOTES	CHEMICAL SOURCE	PRIMARY REFERENCE
Ethylene glycol	4700	17800	NA	Litchfield and Wilcoxon method	Holzman Sprague-Dawley rats; 243-274 g	male	oral intubation	316 mg/kg, 1000 mg/kg, 3160 mg/kg, 10000 mg/kg, 31600 mg/kg in corn oil	clinical observations included depression, rapid respiration and hunching; 2 rats dead at highest dose	5 groups of 2 males; only mortalities were both rats at the 31600 mg/kg dose; fasted overnight	NA	from EPA TSCATS database; Acute Toxicity Study in Rats Administered One of 10 Materials (final report) with Cover Letter dated 090869, (1969), EPA Doc. No. 40-6942189, Fiche No. OTS0519235. *FMC Corporation*
Fenpropathrin	18	18 - 24	NA	NA	Charles River (?) rats	female	oral	5% solution in DMSO	mortalities recorded 10 days after dosing	15 male, 15 female rats used; 30 total rats; rats injected with 0.9% saline i.p. (1 mL/kg) 2 hour before dosing	NA	**RTECS REFERENCE** *CODEN: PSSCBG Bibliographic Data: Pesticide Science. (Blackwell Scientific Pub. Ltd., POB 88, Oxford, UK) V.1- 1970- CODEN Reference: 8,579,1977.* ---- Crawford MJ, Hutson DH. 1977. The metabolism of the pyrthroid insecticide (+/-)-a-cyano-3-phenoxybenzyl 2,2,3,3-tetramethyl-cyclopropanecarboxylate, WL 41706, in the rat. Pestic Sci 8:579-599. *Shell Research Limited, Kent, UK*
Fenpropathrin	18	24 - 36	NA	NA	Charles River (?) rats	male	oral	5% solution in DMSO	mortalities recorded 10 days after dosing	15 male, 15 female rats used; 30 total rats; rats injected with 0.9% saline i.p. (1 mL/kg) 2 hour before dosing	NA	Crawford MJ, Hutson DH. 1977. The metabolism of the pyrthroid insecticide (+/-)-a-cyano-3-phenoxybenzyl 2,2,3,3-tetramethyl-cyclopropanecarboxylate, WL 41706, in the rat. Pestic Sci 8:579-599. Shell Research Limited, Kent, UK
Fenpropathrin	18	24 - 36	NA	NA	Charles River (?) rats	female	oral	5% solution in DMSO	mortalities recorded 10 days after dosing	12 male, 12 female rats used; 24 total rats; rats pretreated with corn oil 18 hour before dosing	NA	Crawford MJ, Hutson DH. 1977. The metabolism of the pyrthroid insecticide (+/-)-a-cyano-3-phenoxybenzyl 2,2,3,3-tetramethyl-cyclopropanecarboxylate, WL 41706, in the rat. Pestic Sci 8:579-599. Shell Research Limited, Kent, UK
Fenpropathrin	18	24 - 36	NA	NA	Charles River (?) rats	male	oral	5% solution in DMSO	mortalities recorded 10 days after dosing	12 male, 12 female rats used; 24 total rats; rats pretreated with corn oil 18 hour before dosing	NA	Crawford MJ, Hutson DH. 1977. The metabolism of the pyrthroid insecticide (+/-)-a-cyano-3-phenoxybenzyl 2,2,3,3-tetramethyl-cyclopropanecarboxylate, WL 41706, in the rat. Pestic Sci 8:579-599. Shell Research Limited, Kent, UK
Fenpropathrin	18	48.5	37.6 - 62.6 (CL)	NA	rats	female	oral gavage	single doses (mg/kg): 15, 20, 30, 50, 59, 77, 100, 120, 169; doses in corn oil	observed for 14 days; decrease of spontaneous motor activity, hypersensitivity, fibrillation, tremor, clonic convulsion, salivation, lacrimation, incontinence, hind limb ataxia; deaths resulted within 24 hour and signs of intoxication dissapeared in 24 - 48 hour; min. toxic dose was 20 mg/kg	8 groups of 10 rats; 80 rats used	Fenpropathrin 97% (S-3206 lot. No. 022018)	Sumitomo Chemical Co., Japan; FT-50-0018; Jan. 1, 1979; U.S. EPA, Office of Pesticide Programs; Health Effects Division; Tox Oneliners; MRID No. 00127343; EPA Chem. Code: 127901; Core Grade/Tox Record No. minimum 004567; EPA Accession No. 249937
Fenpropathrin	18	49	NA	NA	rats	female	oral	NA	NA	assumed to be same LD50 value as Sumitomo 1979	NA	Fujita Y. 1981. Meothrin (Fenpropathrin). Japan Plant Protection Assoc. Japan Pesticide Information 38:21 -25.
Fenpropathrin	18	54	43.5 - 67.0 (CL)	NA	rats	male	oral gavage	single doses (mg/kg): 15, 20, 30, 50, 59, 77, 100, 120, 169; doses in corn oil	observed for 14 days; decrease of spontaneous motor activity, hypersensitivity, fibrillation, tremor, clonic convulsion, salivation, lacrimation, incontinence, hind limb ataxia; deaths resulted within 24 hour and signs of intoxication dissapeared in 24 - 48 hour; min. toxic dose was 20 mg/kg	9 groups of 10 rats; 90 rats used	Fenpropathrin 97% (S-3206 lot. No. 022018)	Sumitomo Chemical Co., Japan; FT-50-0018; Jan. 1, 1979; U.S. EPA, Office of Pesticide Programs; Health Effects Division; Tox Oneliners; MRID No. 00127343; EPA Chem. Code: 127901; Core Grade/Tox Record No. minimum 004567; EPA Accession No. 249937
Fenpropathrin	18	54	NA	NA	rats	male	oral	NA	NA	assumed to be same LD50 value as Sumitomo 1979	NA	Fujita Y. 1981. Meothrin (Fenpropathrin). Japan Plant Protection Assoc. Japan Pesticide Information 38:21-25.
Fenpropathrin	18	66.7	50.6 - 87.9 (CL)	NA	Sprague Dawley rats	female	oral gavage	single doses (mg/kg): 0, 10, 25, 50, 60, 72, 86, 104, 125; doses in corn oil	observed for 14 days; signs of intoxication with doses 25 mg/kg and above; muscular fibrillation, soft feces, diarrhea, tremor, decreased spontaneous activity, ataxia, limb paralysis, irregular respiration, slight salivation, urinary incontinence; signs developed an hour after dosing but rats recovered after 3 days; deaths resulted on day of dosing or day after dosing	rats fasted 20 hour before dosing; 9 groups of 10 rats; 90 rats used	Fenpropathrin 91.8% (S-3206 technical grade, lot. No. 2TC019)	Sumitomo Chemical Co., Japan; FT-30-0081; Jan. 17, 1983; U.S. EPA, Office of Pesticide Programs; Health Effects Division; Tox Oneliners; MRID No. 00127342; EPA Chem. Code: 127901; Core Grade/Tox Record No. guideline 004567; EPA Accession No. 249937
Fenpropathrin	18	70.6	53.7 - 92.7 (CL)	NA	Sprague Dawley rats	male	oral gavage	single doses (mg/kg): 0, 10, 25, 50, 60, 72, 86, 104, 125; doses in corn oil	observed for 14 days; signs of intoxication with doses 25 mg/kg and above; muscular fibrillation, soft feces, diarrhea, tremor, decreased spontaneous activity, ataxia, limb paralysis, irregular respiration, slight salivation, urinary incontinence; signs developed an hour after dosing but rats recovered after 3 days; deaths resulted on day of dosing or day after dosing	rats fasted 20 hour before dosing; 9 groups of 10 rats; 90 rats used	Fenpropathrin 91.8% (S-3206 technical grade, lot. No. 2TC019)	Sumitomo Chemical Co., Japan; FT-30-0081; Jan. 17, 1983; U.S. EPA, Office of Pesticide Programs; Health Effects Division; Tox Oneliners; MRID No. 00127342; EPA Chem. Code: 127901; Core Grade/Tox Record No. guideline 004567; EPA Accession No. 249937
Fenpropathrin	18	71.6	56.1 - 92.0	NA	rats	female	oral	NA	NA	NA	Danitol S-3206 (2.4 lb/GEC)	International Reseach & Development Corp.; 491-003; FT-11-0052; Oct. 26, 1981; U.S. EPA, Office of Pesticide Programs; Health Effects Division; Tox Oneliners; MRID No. 00128341; EPA Chem. Code: 127901; Core Grade/Tox Record No. guideline 003814
Fenpropathrin	18	72.1	53.0 - 82.5	NA	rats	male and female	oral	NA	NA	NA	Danitol S-3206 (2.4 lb/GEC)	International Reseach & Development Corp.; 491-003; FT-11-0052; Oct. 26, 1981; U.S. EPA, Office of Pesticide Programs; Health Effects Division; Tox Oneliners; MRID No. 00128341; EPA Chem. Code: 127901; Core Grade/Tox Record No. guideline 003814

CHEMICAL[1]	LD50[2] mg/kg oral rat RTECS 2002	LD50[3] mg/kg oral rat Primary Reference	LD50[4] mg/kg (range) Primary Reference	LD50 CALCULATION METHOD[5] Primary Reference	ANIMAL INFORMATION (stock, weight, age)	GENDER	ROUTE/ METHOD OF EXPOSURE[6]	DOSE	OBSERVATIONS	NOTES	CHEMICAL SOURCE	PRIMARY REFERENCE
Fenpropathrin	18	72.4	62.1 - 84.3	NA	rats	male	oral	NA	NA	NA	Danitol S-3206 (2.4 lb/GEC)	International Reseach & Development Corp.; 491-003; FT-11-0052; Oct. 26, 1981; U.S. EPA, Office of Pesticide Programs; Health Effects Division; Tox Oneliners; MRID No. 00128341; EPA Chem. Code: 127901; Core Grade/Tox Record No. guideline 003814
Fenpropathrin	18	107	69.8 - 164 (CL)	NA	Sprague Dawley rats	female	oral gavage	single doses (mg/kg): 0, 25, 50, 90, 120, 160, 220, 300	observed for 14 days; toxic signs noted at 50 mg/kg and above; muscular fibrillation, tremor, ataxia, limb paralysis, irregular respiration, lacrimation, salivation, urinary incontinence, diarrhea	8 groups of 10 rats; 80 rats used	Fenpropathrin 97.3% (S-3206 lot. No. T-1)	Sumitomo Chemical Co., Japan; FT-20-0076; Sept. 12, 1982; U.S. EPA, Office of Pesticide Programs; Health Effects Division; Tox Oneliners; MRID No. 00127344; EPA Chem. Code: 127901; Core Grade/Tox Record No. guideline 004567; EPA Accession No. 249937
Fenpropathrin	18	164	115 - 234 (CL)	NA	Sprague Dawley rats	male	oral gavage	single doses (mg/kg): 0, 25, 50, 90, 120, 160, 220, 300	observed for 14 days; toxic signs noted at 50 mg/kg and above; muscular fibrillation, tremor, ataxia, limb paralysis, irregular respiration, lacrimation, salivation, urinary incontinence, diarrhea	8 groups of 10 rats; 80 rats used	Fenpropathrin 97.3% (S-3206 lot. No. T-1)	Sumitomo Chemical Co., Japan; FT-20-0076; Sept. 12, 1982; U.S. EPA, Office of Pesticide Programs; Health Effects Division; Tox Oneliners; MRID No. 00127344; EPA Chem. Code: 127901; Core Grade/Tox Record No. guideline 004567; EPA Accession No. 249937
Gibberellic acid	6300	> 5000	NA	NA	rats	male and female	oral	NA	NA	NA	Gibberellins Tech. GA47A, 90%	Hazleton Laboratories, Inc.; HLA 80602323; Aug. 29, 1988; U.S. EPA, Office of Pesticide Programs; Health Effects Division; Tox Oneliners; MRID No. 40873201; EPA Chem. Code: 043801; Core Grade/Tox Record No. Guideline 007756; FEB. 9, 1990
Gibberellic acid	6300	> 5000	NA	NA	rats	female	oral	NA	NA	NA	Pro Gibb 4% (gibberellic acid); Lot 28-T80-CF	Abbott Research Center; TA89-363; Feb. 20, 1990; U.S. EPA, Office of Pesticide Programs; Health Effects Division; Tox Oneliners; MRID No.41558201; EPA Chem. Code: 043801; Core Grade/Tox Record No. Guideline 008645; Oct. 8, 1991
Gibberellic acid	6300	> 5000	NA	NA	rats	NA	oral	5000 mg/mL	NA	NA	cytokinin (as kinetin) 0.012%; Gibberellic acid 0.0007%	University of Utah Reearch Institute 03-80; TR 05-485-002A; Jan. 20, 1984; U.S. EPA, Office of Pesticide Programs; Health Effects Division; Tox Oneliners; MRID No. 00142864; EPA Chem. Code: 043801; Core Grade/Tox Record No. Guideline 006198
Gibberellic acid	6300	> 5000	NA	NA	rats	NA	oral	NA	NA	NA	Pro Gibb (gibberellic acid 10%);	Ricerca, Inc.; 90-0138; May 31, 1990; U.S. EPA, Office of Pesticide Programs; Health Effects Division; Tox Oneliners; MRID No. 41560401; EPA Chem. Code: 043801; Core Grade/Tox Record No. supplementary 008876; Dec. 5, 1991
Gibberellic acid	6300	> 5000	NA	NA	rats	male and female	oral	NA	NA	NA	Gibberellic acid 7.5% a.l.	Ricerca, Inc.; 90-0138; May 31, 1990; U.S. EPA, Office of Pesticide Programs; Health Effects Division; Tox Oneliners; MRID No. 41591103; EPA Chem. Code: 043801; Core Grade/Tox Record No. Guideline 008571; Sept. 11, 1991
Gibberellic acid	6300	> 5000	NA	NA	Charles River Crl CD; 271-293 g; young adult	male	oral	5000 mg/mL in corn oil; 10 mL/kg dose;	14 day observation; 0/5 animals dead; dyspnea	5 animals used; tan to white powder	Gibberellins Tech., 88.0%	Hazleton Laboratories, Inc.; HLA 90305639; June 22, 1989; U.S. EPA, Office of Pesticide Programs; Health Effects Division; Tox Oneliners; MRID No. 41605801; EPA Chem. Code: 043801; Core Grade/Tox Record No. Guideline 008916; Dec. 17, 1991
Gibberellic acid	6300	> 5000	NA	NA	Charles River Crl CD; 245-271 g; young adult	female	oral	5000 mg/mL in corn oil	14 day observation; 0/5 animals dead; dyspnea	5 animals used; tan to white powder	Gibberellins Tech., 88.0%	Hazleton Laboratories, Inc.; HLA 90305639; June 22, 1989; U.S. EPA, Office of Pesticide Programs; Health Effects Division; Tox Oneliners; MRID No. 41605801; EPA Chem. Code: 043801; Core Grade/Tox Record No. Guideline 008916; Dec. 17, 1991
Gibberellic acid	6300	5780	NA	NA	rats	male	oral	NA	NA	NA	Pro Gibb 4% (gibberellic acid); Lot 28-T80-CF	Abbott Research Center; TA89-363; Feb. 20, 1990; U.S. EPA, Office of Pesticide Programs; Health Effects Division; Tox Oneliners; MRID No.41558201; EPA Chem. Code: 043801; Core Grade/Tox Record No. Guideline 008645; Oct. 8, 1991
Gibberellic acid	6300	6300	NA	NA	rats	NA	oral	NA	NA	NA	NA	**RTECS REFERENCE-SECONDARY SOURCE** G*ibberellic Acid. (1977). CODEN: 85ARAE Bibliographic Data: "Agricultural Chemicals," Thomson, W.T., 4 vols., Fresno, CA, Thomson Publications, 1976/77 revision CODEN Reference: 3,43,1976/1977.*
Glutethimide	600	600	NA	NA	rats	NA	oral	NA	NA	NA	NA	**RTECS REFERENCE** *CODEN: 27ZQAG Bibliographic Data: "Psychotropic Drugs and Related Compounds," 2nd ed., Usdin, E., and D.H. Efron, Dept. of Health, Education and Welfare, Washington, DC, 1972 CODEN Reference: -,233,1972.*
Glycerol	12600	12600	NA	NA	rats	NA	oral	NA	NA	reference in Russian	NA	**RTECS REFERENCE-RUSSIAN** *CODEN: FRZKAP Bibliographic Data: Farmatsevtichnii Zhurnal (Kiev). (V/O Mezhdunarodnaya Kniga, 113095 Moscow, USSR) V.3- 1930- CODEN Reference: (6),56,1977.*
Glycerol	12600	15890 (12.6 cc/kg; used density of 1.261 for conversion)	NA	NA	rats	NA	oral	NA	NA	Reference provided by ZEBET as source of RC value (i.e., from 1983/84 RTECS), but mg/kg value calculated from cc/kg value is different from RC value (12691 vs 15890 mg/kg). Maybe ZEBET didn't use density? This is not a primary reference.	NA	Woodard G, Johnson VD, Nelson AA. 1945. Acute toxicity of 2-methyl, 2-4 pentanediol. Fed Proc 4:142-143. (Supposed 1983/84 RTECS reference)
Glycerol	12600	27500	23950 - 31610 (95% probability; +/- 1.96 S.D.; slope = 8.90)	probits (Bliss)	Wistar albino rats; 90-120 g	male	oral; stomach tube; single doses	50% concentration in water; largest dose given was 50 g/kg	most deaths occurred in 2 days; all deaths occurred in 14 days	groups of 10 animals; 10 animals per dose	purified commercial grade	Smyth HF Jr, Seaton J, Fischer L. 1941. The single dose toxicity of some glycols and derivatives. J Ind Hyg Toxicol 23:259-268. *Mellon Institute, Pittsburgh, PA*

CHEMICAL[1]	LD50[2] mg/kg oral rat RTECS 2002	LD50[3] mg/kg oral rat Primary Reference	LD50[4] mg/kg (range) Primary Reference	LD50 CALCULATION METHOD[5] Primary Reference	ANIMAL INFORMATION (stock, weight, age)	GENDER	ROUTE/ METHOD OF EXPOSURE[6]	DOSE	OBSERVATIONS	NOTES	CHEMICAL SOURCE	PRIMARY REFERENCE
Glycerol	12600	26730 - A 27650 - B (A = 21.2 mL/kg; B = 21.93 mL/kg; used density of 1.261 to convert to mg)	NA	A: Behrens (1929) B: Bliss (1938)	rats	NA	oral	NA	NA	40 - 90 animals used; NICEATM used value B since authors stated it was more accurate	NA	Deichmann WB, Mergard EG. 1948. Comparative evaluation of methods employed to express the degree of toxicity of a compound. J Ind Hyg Toxicol 30:373-378. *Albany Medical College, Albany, NY; University of Cincinnati, Cincinnati, OH*
Haloperidol	128	128	77 - 212	NA	rat	NA	oral	NA	NA	unknown primary source of information	NA	**RTECS REFERENCE** *CODEN: ARZNAD Bibliographic Data: Arzneimittel-Forschung. Drug Research. (Editio Cantor Verlag, Postfach 1255, W-7960 Aulendorf, Fed. Rep. Ger.) V.1- 1951- CODEN Reference: 24,45,1974.* ------ Niemegeers CJC, Janssen PAJ. 1974. Bromoperidol, a new potent neuroleptic of the butyrophenone series. Arzneimittel-Forschung Drug Research 24 (1):45-52. *Janssen Pharmaceutica, Belgium*
Haloperidol	128	165	NA	NA	CFN; newborn	NA	oral	NA	NA	information from: drug applications from pharmaceutical manufacturers, the literature, and FDA labs	NA	Goldenthal EI. 1971. A compilation of LD50 values in newborn and adult animals. Toxicology and Applied Pharamacology 18:185-207. *Bureau of Drugs, Food and Drug Administration, Dept. of Health, Education, and Welfare, Rockville, MD.*
Haloperidol	128	850	617 - 1173	NA	Holtzman; adult	male	oral	NA	NA	information from: drug applications from pharmaceutical manufacturers, the literature, and FDA labs	NA	Goldenthal EI. 1971. A compilation of LD50 values in newborn and adult animals. Toxicology and Applied Pharamacology 18:185-207. *Bureau of Drugs, Food and Drug Administration, Dept. of Health, Education, and Welfare, Rockville, MD.*
Hexachlorophene	56	9	2 (S.E.)	Miller and Tainter (1944)	Sprague-Dawley rats; 10 day	male and female	oral; stomach tube	1% carboxymethylcellulose	observed for 10 day	approximately equal numbers of males and females; 28 rats	NA	Nieminen L, Bjondahn K, Mottonen M. 1973. Effect of hexachlorophene on the rat brain during ontogenesis. Fd Cosmet Toxicol 11:635-639.
Hexachlorophene	56	42	5 (S.E.)	Miller and Tainter (1944)	Sprague-Dawley rats; 20 day	male and female	oral; stomach tube	1% carboxymethylcellulose	observed for 10 day	approximately equal numbers of males and females; 22 rats; values from graph	NA	Nieminen L, Bjondahn K, Mottonen M. 1973. Effect of hexachlorophene on the rat brain during ontogenesis. Fd Cosmet Toxicol 11:635-639.
Hexachlorophene	56	56	8 (S.E.)	Miller and Tainter (1944)	Sprague-Dawley rats; 300 day	male and female	oral; stomach tube	1% carboxymethylcellulose	observed for 10 day	approximately equal numbers of males and females; 14 rats; values from graph	NA	Nieminen L, Bjondahn K, Mottonen M. 1973. Effect of hexachlorophene on the rat brain during ontogenesis. Fd Cosmet Toxicol 11:635-639.
Hexachlorophene	56	56	51 - 62 (95% CI)	Litchfield and Wilcoxon method (1949)	Sherman strain rats (SPF); adult;	female	oral; stomach tube	peanut oil solution	died within 3 days; severe depression and diarrhea	5 or more groups of 10 rats each	USP	**RTECS REFERENCE** *CODEN: TXAPA9 Bibliographic Data: Toxicology and Applied Pharmacology. (Academic Press, Inc., 1 E. First St., Duluth, MN 55802) V.1- 1959- CODEN Reference: 25, 332, 1973.* ---- Gaines TB, Kimbrough RD, Linder RE. 1973. The oral and dermal toxicity of hexachlorophene. Toxicology and Applied Pharmacology 25:332-343.
Hexachlorophene	56	57	52 - 61 (95% CL; slope = 13.5)	Finney's maximum likelihood probit	Sherman strain rats (SPF); min wt. = 200 g; min age of 90 days	female	oral; stomach tube	chemical in peanut oil; 0.005mL/g of bw	observed for at least 14 days after dosing or until recovered from signs of toxicity	At least 40 rats used; min. of 10 animals per group tested; min. of 4 doses; animals used are the same as Gaines 1973	technical grade	Gaines TB, Linder RE. 1986. Acute toxicity of pesticides in adult and weanling rats. Fundam Appl Toxicol 7(2):299-308. *Health Effects Research Laboratory, U.S. EPA, Research Triangle Park, NC*
Hexachlorophene	56	57.6	50.8 - 65.5 (95% CI)	Weil (1952) method	Wistar albino rats; 400 g; 17 weeks	male	oral	corn oil solution; geometric dose factor of 1.2	preliminary observations over a 1 - 2 week period after dosing; no significant mortalities occurred after 5 days; toxicity signs: lethargy, posterior paralysis, increased rate of respiration, hyperthermia, and diarrhea	16 rats at 4 dosage levels; fasted overnight	U.S.P. grade; Givaudan Corp., Clifton, NJ	Nakaue HS, Dost FN, Buhler DR. 1973. Studies On The Toxicity Of Hexachlorophene In Rats. Toxicol Appl Pharmacol 24:239-49.A19 *Oregon State University, Corvallis, OR*
Hexachlorophene	56	60	4 (S.E.)	Miller and Tainter (1944)	Sprague-Dawley; 70 day	male and female	oral; stomach tube	1% carboxymethylcellulose	observed for 10 day	approximately equal numbers of males and females; 84 rats; values from graph	NA	Nieminen L, Bjondahn K, Mottonen M. 1973. Effect of hexachlorophene on the rat brain during ontogenesis. Fd Cosmet Toxicol 11:635-639.
Hexachlorophene	56	60.3	55.0 - 66.0 (95% CI)	Weil (1952) method	Wistar albino rats; 100 g; 45 weeks	male	oral	corn oil solution; geometric dose factor of 1.2	preliminary observations over a 1 - 2 week period after dosing; no significant mortalities occurred after 5 days; toxicity signs: lethargy, posterior paralysis, increased rate of respiration, hyperthermia, and diarrhea	16 rats at 4 dosage levels; fasted overnight	U.S.P. grade; Givaudan Corp., Clifton, NJ	Nakaue HS, Dost FN, Buhler DR. 1973. Studies On The Toxicity Of Hexachlorophene In Rats. Toxicol Appl Pharmacol 24:239-49.A19 *Oregon State University, Corvallis, OR*
Hexachlorophene	56	63	55.5 - 71.8 (95% CI)	Weil (1952) method	Wistar albino rats; 300 g; 10 weeks	male	oral	corn oil solution; geometric dose factor of 1.2	preliminary observations over a 1 - 2 week period after dosing; no significant mortalities occurred after 5 days; toxicity signs: lethargy, posterior paralysis, increased rate of respiration, hyperthermia, and diarrhea	16 rats at 4 dosage levels; fasted overnight	U.S.P. grade; Givaudan Corp., Clifton, NJ	Nakaue HS, Dost FN, Buhler DR. 1973. Studies On The Toxicity Of Hexachlorophene In Rats. Toxicol Appl Pharmacol 24:239-49.A19 *Oregon State University, Corvallis, OR*
Hexachlorophene	56	63	45.9 - 87.2 (95% CI)	Weil (1952) method	Wistar albino rats; 200 g; 9 weeks	female	oral	corn oil solution; geometric dose factor of 1.2	preliminary observations over a 1 - 2 week period after dosing; no significant mortalities occurred after 5 days; toxicity signs: lethargy, posterior paralysis, increased rate of respiration, hyperthermia, and diarrhea	16 rats at 4 dosage levels; fasted overnight	U.S.P. grade; Givaudan Corp., Clifton, NJ	Nakaue HS, Dost FN, Buhler DR. 1973. Studies On The Toxicity Of Hexachlorophene In Rats. Toxicol Appl Pharmacol 24:239-49.A19 *Oregon State University, Corvallis, OR*

CHEMICAL[1]	LD50[2] mg/kg oral rat RTECS 2002	LD50[3] mg/kg oral rat Primary Reference	LD50[4] mg/kg (range) Primary Reference	LD50 CALCULATION METHOD[5] Primary Reference	ANIMAL INFORMATION (stock, weight, age)	GENDER	ROUTE/ METHOD OF EXPOSURE[6]	DOSE	OBSERVATIONS	NOTES	CHEMICAL SOURCE	PRIMARY REFERENCE
Hexachlorophene	56	66	59 - 75 95% CL; slope 10.6	Finney's maximum likelihood probit	Sherman strain rats (SPF); min wt. = 175 g; min age of 90 days	male	oral; stomach tube	chemical in peanut oil; 0.005 mL/g of bw	observed for at least 14 days after dosing or until recovered from signs of toxicity	At least 40 rats used; min. of 10 animals per group tested; min. of 4 doses; animals used are the same as Gaines 1973	technical grade	Gaines TB, Linder RE. 1986. Acute toxicity of pesticides in adult and weanling rats. Fundam Appl Toxicol 7(2):299-308. *Health Effects Research Laboratory, U.S. EPA, Research Triangle Park, NC*
Hexachlorophene	56	66	57 - 75 (95% CI)	Litchfield and Wilcoxon method (1949)	Sherman strain rats (SPF); adult	male	oral; stomach tube	peanut oil solution	died within 12 days; severe depression and diarrhea	5 or more groups of 10 rats each;	NA	Gaines TB, Kimbrough RD, Linder RE. 1973. The oral and dermal toxicity of hexachlorophene. Toxicology and Applied Pharmacology 25:332 -343. *Environmental Protection Agency, Chamblee, GA*
Hexachlorophene	56	69.1	64.6 - 94.2 (95% CI)	Weil (1952) method	Wistar albino rats; 100 g; 5 weeks	female	oral	corn oil solution; geometric dose factor of 1.2	preliminary observations over a 1 - 2 week period after dosing; no significant mortalities occurred after 5 days; toxicity signs: lethargy, posterior paralysis, increased rate of respiration, hyperthermia, and diarrhea	16 rats at 4 dosage levels; fasted overnight	U.S.P. grade; Givaudan Corp., Clifton, NJ	Nakaue HS, Dost FN, Buhler DR. 1973. Studies On The Toxicity Of Hexachlorophene In Rats. Toxicol Appl Pharmacol 24:239-49.A19 *Oregon State University, Corvallis, OR*
Hexachlorophene	56	69.2	55.5 - 86.2 (95% CI)	Weil (1952) method	Wistar albino rats; 200 g; 7 weeks	male	oral	corn oil solution; geometric dose factor of 1.2	preliminary observations over a 1 - 2 week period after dosing; no significant mortalities occurred after 5 days; toxicity signs: lethargy, posterior paralysis, increased rate of respiration, hyperthermia, and diarrhea	16 rats at 4 dosage levels; fasted overnight	U.S.P. grade; Givaudan Corp., Clifton, NJ	Nakaue HS, Dost FN, Buhler DR. 1973. Studies On The Toxicity Of Hexachlorophene In Rats. Toxicol Appl Pharmacol 24:239-49.A19 *Oregon State University, Corvallis, OR*
Hexachlorophene	56	83	6 (S.E.)	Miller and Tainter (1944)	Sprague-Dawley rats; 25 day	male and female	oral; stomach tube	1% carboxymethylcellulose	observed for 10 day	approximately equal numbers of males and females; 12 rats; values from graph	NA	Nieminen L, Bjondahn K, Mottonen M. 1973. Effect of hexachlorophene on the rat brain during ontogenesis. Fd Cosmet Toxicol 11:635-639.
Hexachlorophene	56	84	8 (S.E.)	Miller and Tainter (1944)	Sprague-Dawley rats; 50 day	male and female	oral; stomach tube	1% carboxymethylcellulose	observed for 10 day	approximately equal numbers of males and females; 16 rats; values from graph	NA	Nieminen L, Bjondahn K, Mottonen M. 1973. Effect of hexachlorophene on the rat brain during ontogenesis. Fd Cosmet Toxicol 11:635-639.
Hexachlorophene	56	87	79.2 - 95.5 (95% CI)	Weil (1952) method	Wistar albino rats; 67 g; 4 weeks	male	oral	corn oil solution; geometric dose factor of 12	preliminary observations over a 1 - 2 week period after dosing; no significant mortalities occurred after 5 days; toxicity signs: lethargy, posterior paralysis, increased rate of respiration, hyperthermia, and diarrhea	16 rats at 4 dosage levels; fasted overnight	U.S.P. grade; Givaudan Corp., Clifton, NJ	Nakaue HS, Dost FN, Buhler DR. 1973. Studies On The Toxicity Of Hexachlorophene In Rats. Toxicol Appl Pharmacol 24:239-49.A19 *Oregon State University, Corvallis, OR*
Hexachlorophene	56	87	79.5 - 95.0 (95% CI)	Weil (1952) method	Wistar albino rats; 68 g; 4 weeks	female	oral	corn oil solution; geometric dose factor of 12	preliminary observations over a 1 - 2 week period after dosing; no significant mortalities occurred after 5 days; toxicity signs: lethargy, posterior paralysis, increased rate of respiration, hyperthermia, and diarrhea	16 rats at 4 dosage levels; fasted overnight	U.S.P. grade; Givaudan Corp., Clifton, NJ	Nakaue HS, Dost FN, Buhler DR. 1973. Studies On The Toxicity Of Hexachlorophene In Rats. Toxicol Appl Pharmacol 24:239-49.A19 *Oregon State University, Corvallis, OR*
Hexachlorophene	56	104.03	84.45 - 128.20 (95% fiducial limit)	Bliss method	normal white rats; 150-250 g	NA	NA	40, 80, 120, 160, 200 mg/kg	25 rats used; 12 dead within 40 hours	5 groups of 5 rats each	NA	Chung HL., 1963. Hexachlorophene (G-11) as a new specific drug against Clonorchiasis Sinensis. Chinese Medical Journal. 82. No. 11. November. *Peking Sino-Soviet Friendship Hospital, Peking, China*
Hexachlorophene	56	111	12 (S.E.)	Miller and Tainter (1944)	Sprague-Dawley rats; 32 day	male and female	oral; stomach tube	1% carboxymethylcellulose	observed for 10 days	approximately equal numbers of males and females; 66 rats	NA	Nieminen L, Bjondahn K, Mottonen M. 1973. Effect of hexachlorophene on the rat brain during ontogenesis. Fd Cosmet Toxicol 11:635-639.
Hexachlorophene	56	120	110 - 131 (95% CI)	Litchfield and Wilcoxin 1949	Sherman strain rats (SPF); weanling	female	oral; stomach tube	peanut oil solution	died within 5 days; depression and posterior paralysis	5 or more groups of 10 rats each	NA	Gaines TB, Kimbrough RD, Linder RE. 1973. The oral and dermal toxicity of hexachlorophene. Toxicology and Applied Pharmacology 25:332 -343. *Environmental Protection Agency, Chamblee, GA*
Hexachlorophene	56	121	112 - 133 95% CL; slope 14.8	Finney's maximum likelihood probit	Sherman strain rats (SPF); 4-6 weeks	female	oral; stomach tube	chemical in peanut oil; 0.005 mL/g of bw	observed for at least 14 days after dosing or until recovered from signs of toxicity	At least 40 rats used; min. of 10 animals per group tested; min. of 4 doses; animals used are the same as Gaines 1973	technical grade	Gaines TB, Linder RE. 1986. Acute toxicity of pesticides in adult and weanling rats. Fundam Appl Toxicol 7(2):299-308. *Health Effects Research Laboratory, U.S. EPA, Research Triangle Park, NC*
Hexachlorophene	56	165	149 - 179 (95% CI)	Probit analysis	Crl-CD rats from Charles River Breeding lab; 220 - 280 g; 60 days	male	oral; intragastric intubation	0.5 - 3.9% suspens; dissolved or suspended in corn oil; single dose; 100, 140, 175, 200 mg/kg doses	observed daily for 14 days; death within 6 days; toxic symptoms: staining of the face and perineal area, weakness, diarrhea, weight loss	non fasted; 4 groups of 10; 40 rats used; 17 rats died	99+% pure; Givaudan Corp., Clifton, NJ	Dashiell OL, Kennedy GL Jr. 1984. The effects of fasting on the acute oral toxicity of nine chemicals in the rat. J Appl Toxicol 4(6): 320-325. *E.I. Du Pont de Nemours & Co., Newark, DE*
Hexachlorophene	56	215	191 - 237 (95% CI)	Probit analysis	Crl-CD rats from Charles River Breeding lab; 220 - 280 g; 60 days	male	oral; intragastric intubation	0.26 - 1.4% suspens dissolved or suspended in corn oil; single dose; 50, 100, 170, 225, 275 mg/kg doses	observed daily for 14 days; death within 6 days; toxic symptoms: staining of the face and perineal area, weakness, diarrhea, weight loss	fasted 24 hours before dosing; 5 groups of 10; 50 rats used; 16 rats died	99+% pure; Givaudan Corp., Clifton, NJ	Dashiell OL, Kennedy GL Jr. 1984. The effects of fasting on the acute oral toxicity of nine chemicals in the rat. J Appl Toxicol 4(6): 320-325. *E.I. Du Pont de Nemours & Co., Newark, DE*
Lactic acid	3543	3543	NA	NA	NA	NA	NA	NA	NA	NA	NA	**RTECS REFERENCE** *CODEN: FMCHA2 Bibliographic Data: Farm Chemicals Handbook. (Meister Pub., 37841 Euclid Ave., Willoughy, OH 44094) CODEN Reference: -,C252,1991.*
Lactic acid	3543	3730	3020 - 4610 (95% probability; +/- 1.96 S.D. slope = 4.04)	probits (Bliss)	Wistar albino rats; 90-120 g	male	oral; stomach tube; single doses	concentration in water; largest dose given was 50 g/kg	most deaths occurred in 2 days; all deaths occurred in 14 days	groups of 10 animals; 10 animals per dose	purified commercial grade	Smyth HF Jr, Seaton J, Fischer L. 1941. The single dose toxicity of some glycols and derivatives. J Ind Hyg Toxicol 23:259-268. *Mellon Institute, Pittsburgh, PA*

CHEMICAL[1]	LD50[2] mg/kg oral rat RTECS 2002	LD50[3] mg/kg oral rat Primary Reference	LD50[4] mg/kg (range) Primary Reference	LD50 CALCULATION METHOD[5] Primary Reference	ANIMAL INFORMATION (stock, weight, age)	GENDER	ROUTE/ METHOD OF EXPOSURE[6]	DOSE	OBSERVATIONS	NOTES	CHEMICAL SOURCE	PRIMARY REFERENCE
Lindane	76	76 - 200	NA	NA	rats	NA	oral	NA	NA	secondary source; unknown primary source	NA	**RTECS REFERENCE** *CODEN: SPEADM Bibliographic Data: Special Publication of the Entomological Society of America. (4603 Calvert Rd., College Park, MD 20740) CODEN Reference: 78-1,11,1978.* ---- Kenaga EE, Morgan RW. 1978. Commercial and Experimental Organic Insecticides. 1978 Revision. Special Publication 78-1:1-76. *The Dow Chemical Company, Midland, MI*
Lindane	76	88	76 - 101 (95% CL)	Litchfield and Wilcoxon method (1949)	Sherman strain rats; min. wt. = 175 g; min. age of 90 days	male	oral; stomach tube	chemical in peanut oil; 0.005 mL/g of bw	observed hourly on first day of dosage and twice a day thereafter until time of death; max survival 8 days; 14 days observation	89 rats tested; not fasted	technical grade	Gaines TB. 1960. The acute toxicity of pesticides to rats. Toxicol Appl Pharmacol 2:88-99 *U.S. Dept. of Health, Education, and Welfare, Savannah, GA*
Lindane	76	91	83 - 100 (95% CL)	Litchfield and Wilcoxon method (1949)	Sherman strain rats; min. wt. = 200 g; min. age of 90 days	female	oral; stomach tube	chemical in peanut oil; 0.005mL/g of bw	observed hourly on first day of dosage and twice a day thereafter until time of death; max survival 7 days; 14 days observation	69 rats tested; not fasted	technical grade	Gaines TB. 1960. The acute toxicity of pesticides to rats. Toxicol Appl Pharmacol 2:88-99 *U.S. Dept. of Health, Education, and Welfare, Savannah, GA*
Lindane	76	100	NA	Litchfield and Wilcoxon method (1949)	CFY strain rats; 120+ g; adult	female	oral	NA	NA	NA	99.5% pure; Budapest Chemical Works	Desi I. 1983. Neurotoxicological investigaton of pesticides in animal experiments. Neurobehav Toxicol 5:503-515. *National Institute of Hygiene, Hungary*
Lindane	76	125	NA	NA	rats	NA	oral; stomach tube	NA	hypersensitivity and convulsions	information from the laboratories of Division of Pharmacology, U.S. FDA.; fasted animals	NA	Lehman AJ. 1951. Chemicals in Foods: a report to the association of food and drug officials on current developments. Part II. Pesticides. Quarterly Bulletine (Association of Food and Drug Officials of the United States). Vol. 15:122-133. *U.S. FDA*
Lithium I carbonate	525 553	525	460-598 (95% CI)	Litchfield and Wilcoxon method	Wistar rats; 180 g (ave)	female	oral	in solution; 347, 417, 500, 600, 720, 864 mg/kg	7 days observation; deaths/dose (mg/kg): 347 0/10, 417- 1/10, 500- 3/10, 600- 5/10, 720 - 8/10, 864- 10/10; 14 deaths on day 1, 12 deaths on day 2 , 1 death on day 3; all rats at highest dose dead by day 2	Used 10 rats/dose; RTECS reference; in Japanese	reagent grade	Nakasawa M, et al. 1973. Lithium carbonate toxicity tests, rat and mouse acute toxicity. Kiso to Rinsho Clinical Report 7:1273-1277.
Lithium I carbonate	525 553	553	NA	NA	rats	NA	oral	NA	NA	RTECS reference that provides summary data only. LD50 value is unreferenced and unsupported	reagent grade	Filov VA, Ivin BA, Bandman AL (eds).1993. Harmful Chemical substances. Volume 1: Elements in Groups I-IV of the Periodic Table and their Inorganic Compounds. Ellis Horwood Limited (publisher). First published in Russian asVrednye khimicheskiye vechestra. Neorganicheskiye soyedineniga elementor I-IV grup. VA Filov, ed. Khimiya, St. Petersburg, 1988.
Lithium I carbonate	525 553	590	505-691 (95% CI)	Litchfield and Wilcoxon method	Wistar rats; 220 g (ave)	male	oral	in solution; 347, 417, 500, 600, 720, 864 mg/kg	7 d observation; deaths/dose (mg/kg): 347-0/10, 417- 2/10, 500- 3/10, 600- 5/10, 720 - 8/10, 864- 10/10; most deaths on day 2; 3 deaths on day 1 at highest dose; 3 deaths at lower doses on day 3	Used 10 rats/dose; RTECS reference, in Japanese	reagent grade	Nakasawa M, et al. 1973. Lithium carbonate toxicity tests, rat and mouse acute toxicity. Kiso to Rinsho Clinical Report 7:1273-1277.
Lithium I carbonate	525 553	710	NA	Thompson method; Weil tables	Carworth-Wistar rats; 90-120 g; 4-5 weeks	male	oral gastric intubation	in aqueous solution; concentration intubated = 200 mg/mL.; dosages arranged in a logarithmic series differing by a factor of 2	LD50 based on mortalities during a 14 day period;	non-fasted; groups of 5 rats; single oral dose toxicity	reagent grade	Smyth HF Jr, Carpenter CP, Weil CS, Pozzani UC, Striegel JA, Nycum JS. 1969. Range-finding toxicity data: List VII. Am Ind Hyg Assoc J 30:470-476. *Carnegie-Mellon University, Pittsburgh, PA* (LD50 value). ---- Smyth HF Jr, Carpenter CP, Weil CS, Pozzani UC, Striegel JA. 1962. Range-finding toxicity data: List VI. Am Ind Hyg Assoc J 23:95-107. *Mellon Institute of Industrial Research, Pittsburg, PA* (experimental parameters)
Meprobamate	794	486	+/- 24 (S.E.)	Miller and Tainter (1944)	FDRL-strain rats; 21 days	female	oral	NA	observed for 7 days post-treatment	NA	NA	Weinberg MS, Goldhamer RE, Carson S. 1966. Acute oral toxicity of various drugs in newborn rats after treatment of the dam during gestation. Toxic Appl Pharmac 9:234-239. *Food and Drug Research Laboratories, Inc., Maspeth, NY*
Meprobamate	794	794 (outlier)	584 - 1080 (95% CL)	Litchfield and Wilcoxon method (1949)	rats; 117-180 g; adult	female	oral	suspension; 2.3 - 23.2 mg/kg dose levels	hypothermia, prostration, bradypnea, ptosis, sluggish corneal reflex	5 rats per dose level; 20 rats used	NA	**RTECS REFERENCE** CODEN: TXAPA9 Bibliographic Data: Toxicology and Applied Pharmacology. (Academic Press, Inc., 1 E. First St., Duluth, MN 55802) V.1-1959- CODEN Reference: 19,93,1971. --- Franko BV, Ward JW, Gilbert DL, Woodard G. 1971. Toxicologic studies of glycopyrralate in combination with other drugs. Toxicology and Appled Pharmacology 19:93-102. *Woodard Research Corporation, Herndon, VA*
Meprobamate	794	1286	+/- 81 (S.E.)	Miller and Tainter (1944)	FDRL-strain rats; 100 days	male	oral	NA	observed for 7 days post-treatment	NA	NA	Weinberg MS, Goldhamer RE, Carson S. 1966. Acute oral toxicity of various drugs in newborn rats after treatment of the dam during gestation. Toxic Appl Pharmac 9:234-239. *Food and Drug Research Laboratories, Inc., Maspeth, NY*
Meprobamate	794	1290	+/- 104 (S.E.)	Miller and Tainter (1944)	FDRL-strain rats; 63 days	male	oral	NA	observed for 7 days post-treatment	NA	NA	Weinberg MS, Goldhamer RE, Carson S. 1966. Acute oral toxicity of various drugs in newborn rats after treatment of the dam during gestation. Toxic Appl Pharmac 9:234-239. *Food and Drug Research Laboratories, Inc., Maspeth, NY*

CHEMICAL[1]	LD50[2] mg/kg oral rat RTECS 2002	LD50[3] mg/kg oral rat Primary Reference	LD50[4] mg/kg (range) Primary Reference	LD50 CALCULATION METHOD[5] Primary Reference	ANIMAL INFORMATION (stock, weight, age)	GENDER	ROUTE/ METHOD OF EXPOSURE[6]	DOSE	OBSERVATIONS	NOTES	CHEMICAL SOURCE	PRIMARY REFERENCE
Meprobamate	794	1346	+/- 82 (S.E.)	Miller and Tainter (1944)	FDRL-strain rats; 21 days	male	oral	NA	observed for 7 days post-treatment	NA	NA	Weinberg MS, Goldhamer RE, Carson S. 1966. Acute oral toxicity of various drugs in newborn rats after treatment of the dam during gestation. Toxic Appl Pharmac 9:234-239. *Food and Drug Research Laboratories, Inc., Maspeth, NY*
Meprobamate	794	1361	+/- 76 (S.E.)	Miller and Tainter (1944)	FDRL-strain rats; 100 days	female	oral	NA	observed for 7 days post-treatment	NA	NA	Weinberg MS, Goldhamer RE, Carson S. 1966. Acute oral toxicity of various drugs in newborn rats after treatment of the dam during gestation. Toxic Appl Pharmac 9:234-239. *Food and Drug Research Laboratories, Inc., Maspeth, NY*
Meprobamate	794	1410	+/- 83 (S.E.)	Miller and Tainter (1944)	FDRL-strain rats; 63 days	female	oral	NA	observed for 7 days post-treatment	NA	NA	Weinberg MS, Goldhamer RE, Carson S. 1966. Acute oral toxicity of various drugs in newborn rats after treatment of the dam during gestation. Toxic Appl Pharmac 9:234-239. *Food and Drug Research Laboratories, Inc., Maspeth, NY*
Meprobamate	794	1470		Litchfield and Wilcoxon method (1949)	rats; 117-180 g; adult	male	oral	suspension; 2.3 - 23.2 mg/kg dose levels	hypothermia, prostration, bradypnea, ptosis, sluggish corneal reflex	5 rats per dose level; 20 rats used	NA	Franko BV, Ward JW, Gilbert DL, Woodard G. 1971. Toxicologic studies of glycopyrralate in combination with other drugs. Toxicology and Applied Pharmacology 19:93-102. *Woodard Research Corporation, Herndon, VA*
Meprobamate	794	1522	+/- 16 (S.E.)	Miller and Tainter (1944)	Charles River CD and Sprague-Dawley strains; > 100 g; adult	NA	oral intubation	up to 50 mL/kg	rats observed for 7 days; observed up to 14 days when heavy metals or other compounds that produce latent death were investigated	fasted overnight	NA	Yeary RA, Benish RA, Finkelstein M. 1966. Acute Toxicity of Drugs in Newborn Animals. Journal of Pediatrics 69 (4):663-667. *Dept. of Veterinary Preventive Medicine, Ohio State University, Columbus, OH*
Mercury II chloride	1	1 - 5	NA	NA	rats	NA	oral	NA	NA	lists LD50 range as 1 - 5 mg/kg	NA	**RTECS REFERENCE** *CODEN: PEMNDP Bibliographic Data: Pesticide Manual. (The British Crop Protection Council, 20 Bridport Rd., Thornton Heath CR4 7QG, UK) V.1- 1968- CODEN Reference: 9,550,1991*
Mercury II chloride	1	12	9 - 17 (95% CL)	acceptable methods (e.g., Bliss, Litchfield and Wilcoxon, Weil, Thompson, etc.)	Sprague-Dawley rats; 190-300 g	female	oral gavage	single dose	14 day observation; toxicity symptoms: motor activity decrease, respiratory effects, tremors, blanching, piloerection, diarrhea, chouromodacryorrhoea; time to onset of signs < 1day; duration of signs 11 days; animals fasted 16 -20 hours before administration	UDP Test	NA	Yam J, Reer PJ, Bruce RD. 1991. Comparison of the up-and-down method and the fixed-dose procedure for acute oral toxicity testing. Food Chem Toxicol 29(4):259-264. *The Procter and Gamble Co., Cincinnati, OH*
Mercury II chloride	1	24	17.9 - 32.2	Bliss-Probit method	Sprague-Dawley rats; 5 weeks	male	oral gavage	dissolved in saline; range (mg/kg) of doses 10.6, 13.8, 17.9, 23.3, 30.3, 39.7	observed at 6 hours after dosing and a once a day for 1-2 weeks; most dead within 3 days; 25/60 died; toxic symptoms: piloerection, drooling, hypothermia, abdominal posture, tremor, and diarrhea; dose (mg/kg), dead rats per dose: 10.6-0/10; 13.8-1/10; 17.9-1/10; 23.3-4/10; 30.3-9/10; 39.7-10/10	animals acclimated to environment for 1 week before testing; 6 groups of10 rats each; fasted 16 hours before dosing; 100% lethal dose = 39.7 mg/kg; 0% lethal dose = 10.6 mg/kg	Kishida Chemical Co., Ltd.	Kitagawa H, Saito H, Sugimoto T, Yanaura S, Kitagawa H, Hosokawa T, Sakamoto K. 1982. Effects of diiospropyl-1,3-dithiol-2-ylidene malonate (NKK-105) on acute toxicity of various drugs and heavy metals. J Toxicol Sci 7(2):123-34. *Chiba University; Hoshi College of Pharmacy; Showa University -- Japan*
Mercury II chloride	1	32	NA	Rosiello (1979) and Bliss (1938)	rats	male	oral	10, 15, 25, 40, 60, 100 mg/kg	15 mg/kg: 0/3 dead; 25mg/kg: 0/3 dead; 40 mg/kg: 3/3 dead; 60 mg/kg: 3/3 dead; 6/12 rats dead; LD50 from 12 rats used; LD50 recalculated using US EPA Benchmark Dose soft-ware; Lorke used data from 10 and 100 mg/kg in range finder for all animal groups; omitted this data in recalculation; orginial LD50 from Lorke = 37 mg/kg	acclimated for 5 days; observed for 14 days; 4 groups used for each dose (1, 2, 3, 5 animals per group; total of 11 rats per dose; range finder: 10 mg/kg - 0/3 dead; 100 mg/kg - 3/3 dead; 1000 mg/kg - 3/3 dead; 9 rats in range finder	NA	Lorke D. 1983. A new approach to practical acute toxicity testing. Arch Toxicol 54(4):275-288. *Institut fur Toxikologie, Wuppertal, Federal Republic of Germany*
Mercury II chloride	1	39	NA	Rosiello (1979) and Bliss (1938)	rats	male	oral	10, 15, 25, 40, 60, 100 mg/kg	15 mg/kg: 1/11 dead; 25mg/kg: 1/11 dead; 40 mg/kg: 7/11 dead; 60 mg/kg: 10/11 dead; 19/44 rats dead; LD50 from 44 rats used; LD50 recalculated using US EPA Benchmark Dose software; Lorke used data from 10 and 100 mg/kg in range finder for all animal groups; omitted this data in recalculation; Orginial LD50 from Lorke = 37 mg/kg; this value based on accumulated data from 4 different test groups	acclimated for five days; observed for 14 days; 4 groups used for each dose (1, 2, 3, 5 animals per group; total of 11 rats per dose; range finder showed: 10 mg/kg - 0/3 dead; 100 mg/kg - 3/3 dead; 1000 mg/kg - 3/3 dead; 9 rats in range finder	NA	Lorke D. 1983. A new approach to practical acute toxicity testing. Arch Toxicol 54(4):275-288. *Institut fur Toxikologie, Wuppertal, Federal Republic of Germany*
Mercury II chloride	1	40	NA	Rosiello (1979) and Bliss (1938)	rats	male	oral	10, 15, 25, 40, 60, 100 mg/kg	15 mg/kg: 1/5 dead; 25mg/kg: 1/5 dead; 40 mg/kg: 3/5 dead; 60 mg/kg: 5/5 dead; 10/20 rats dead; LD50 based on 20 rats used; LD50 recalculated using US EPA Benchmark Dose software; Lorke used data from 10 and 100 mg/kg in range finder for all animal groups; omitted this data in recalculation; orginial LD50 from Lorke = 32 mg/kg	acclimated for five days; observed for 14 days; 4 groups used for each dose (1, 2, 3, 5 animals per group; total of 11 rats per dose; range finder showed: 10 mg/kg - 0/3 dead; 100 mg/kg - 3/3 dead; 1000 mg/kg - 3/3 dead; 9 rats in range finder	NA	Lorke D. 1983. A new approach to practical acute toxicity testing. Arch Toxicol 54(4):275-288. *Institut fur Toxikologie, Wuppertal, Federal Republic of Germany*

CHEMICAL[1]	LD50[2] mg/kg oral rat RTECS 2002	LD50[3] mg/kg oral rat Primary Reference	LD50[4] mg/kg (range) Primary Reference	LD50 CALCULATION METHOD[5] Primary Reference	ANIMAL INFORMATION (stock, weight, age)	GENDER	ROUTE/ METHOD OF EXPOSURE[6]	DOSE	OBSERVATIONS	NOTES	CHEMICAL SOURCE	PRIMARY REFERENCE
Mercury II chloride	1	49	NA	Rosiello (1979) and Bliss (1938)	rats	male	oral	10, 15, 25, 40, 60, 100 mg/kg	15 mg/kg: 0/1 dead; 25mg/kg: 0/1 dead; 40 mg/kg: 0/1 dead; 60 mg/kg: 1/1 dead; 1/4 rats dead; LD50 from 4 rats used; T306	acclimated for five days; observed for 14 days; 4 groups used for each dose (1, 2, 3, 5 animals per group; total of 11 rats per dose; range finder showed: 10 mg/kg - 0/3 dead; 100 mg/kg - 3/3 dead; 1000 mg/kg - 3/3 dead; 9 rats in range finder	NA	Lorke D. 1983. A new approach to practical acute toxicity testing. Arch Toxicol 54(4):275-288. *Institut fur Toxikologie, Wuppertal, Federal Republic of Germany*
Mercury II chloride	1	50	40 - 63	Thompson and Weil; 1952; method of moving averages	albino rats; 18 weeks	female	oral; stomach tube	1 mL/200 g bw	observed after 8 days after single oral administration	6 dose levels per group, 6 rats per group; 36 rats used	NA	Kostial K, Kello D, Jugo S, Rabar I, Maljkovic, T. 1978. Influence of age on metal metabolism and toxicity. Environ Health Perspect 25:81-8. *Yugoslav Academy of Sciences and Art, Zagreb, Yugoslavia*
Mercury II chloride	1	50	43 - 59	Thompson and Weil; 1952; method of moving averages	albino rats; 54 weeks	female	oral; stomach tube	1 mL/200 g bw	observed after 8 days after single oral administration	6 dose levels per group, 6 rats per group; 36 rats used	NA	Kostial K, Kello D, Jugo S, Rabar I, Maljkovic, T. 1978. Influence of age on metal metabolism and toxicity. Environ Health Perspect 25:81-86. *Yugoslav Academy of Sciences and Art, Zagreb, Yugoslavia*
Mercury II chloride	1	51	39 - 66 (95% CL)	acceptable methods (e.g., Bliss, Litchfield and Wilcoxon, Weil, Thompson, etc.)	Sprague-Dawley rats	male	oral gavage	single dose	14 day observation; toxicity symptoms: posture, respiratory effects, lethargy, abnormal gait, prostrate coma, salivation; time to onset of signs < 1 day; duration of signs 5 days	3 dose levels (5 male each); 15 rats used; OECD TG401 (1981) followed for experimental procedures; 8 rats dead (average per test)	NA	Vandenheuvel MJ, Clark DG, Fielder RJ, Koundakjian PP, Oliver GJA, Pelling D, Tomlinson NJ, Walker AP. 1990. Jul. The International Validation Of A Fixed-Dose Procedure As An Alternative To The Classical LD50 Test Food And Chemical Toxicology 28(7):469-482.
Mercury II chloride	1	52	NA	Rosiello (1979) and Bliss (1938)	rats	male	oral	10, 15, 25, 40, 60, 100 mg/kg	15 mg/kg: 0/2 dead; 25mg/kg: 0/2 dead; 40 mg/kg: 1/2 dead; 60 mg/kg: 1/2 dead; 2/8 rats dead; LD50 based on 8 rats used; LD50 recalculated using US EPA Benchmark Dose software; Lorke used data from 10 and 100 mg/kg in range finder for all animal groups; omitted this data in recalculation; orginial LD50 from Lorke = 50 mg/kg	acclimated for five days; observed for 14 days; 4 groups used for each dose (1, 2, 3, 5 animals per group; total of 11 rats per dose; range finder showed: 10 mg/kg - 0/3 dead; 100 mg/kg - 3/3 dead; 1000 mg/kg - 3/3 dead; 9 rats in range finder	NA	Lorke D. 1983. A new approach to practical acute toxicity testing. Arch Toxicol 54(4):275-288. *Institut fur Toxikologie, Wuppertal, Federal Republic of Germany*
Mercury II chloride	1	92	77 - 108	Thompson and Weil; 1952; method of moving averages	albino rats; 6 weeks	female	oral; stomach tube	1 mL/200 g bw; 6 dose levels in each group	observed after 8 days after single oral administration	6 dose levels per group, 6 rats per group; 36 rats used	NA	Kostial K, Kello D, Jugo S, Rabar I, Maljkovic, T. 1978. Influence of age on metal metabolism and toxicity. Environ Health Perspect 25:81-86. *Yugoslav Academy of Sciences and Art, Zagreb, Yugoslavia*
Mercury II chloride	1	160 (outlier)	119 - 235 (95% CL)	acceptable methods (e.g., Bliss, Litchfield and Wilcoxon, Weil, Thompson, etc.)	Sprague-Dawley rats	female	oral gavage	single dose	14 day observation; toxicity symptoms: posture, respiratory effects, lethargy, abnormal gait, prostrate coma, salivation; time to onset of signs < 1 day; duration of signs 5 days	3 dose levels (5 female each); 15 rats used; OECD TG401 (1981) followed for experimental procedures; 8 rats dead (average per test)	NA	Vandenheuvel MJ, Clark DG, Fielder RJ, Koundakjian PP, Oliver GJA, Pelling D, Tomlinson NJ, Walker AP. 1990. Jul. The International Validation Of A Fixed-Dose Procedure As An Alternative To The Classical LD50 Test Food And Chemical Toxicology 28(7):469-482.
Methanol	5628	5628	4613 - 6866	NA	rats	NA	oral	NA	NA	reference in Russian; was also cited in 1983/84 RTECS but value was different from that used by RC and reference was not provided by ZEBET	NA	**RTECS REFERENCE** *CODEN: GTPZAB Bibliographic Data: Gigiena Truda i Professional'nye Zabolevaniya. Labor Hygiene and Occupational Diseases. (V/O MezhdunarodnayaKniga, 113095 Moscow, USSR) V.1-36, 1957-1992. For publisher information, see MTPEE1 CODEN Reference: 19(11),27, 1975.* ---- Lazinov AG, Broitman AT. 1975. On the combined action of 2, 6-dimethylphenol and methanol. Gigiena Truda i Professional'nye Zabolevaniya 19(11):27-30
Methanol	5628	5890 (7.4 mL/kg; used density of 0.796 to convert to mg/kg)	4776 - 7244 (95% CL; 6.0 - 9.1 mL/kg)	Litchfield and Wilcoxon method and probit analysis	Sprague-Dawley rats; 16-50 g; 14 days	male and female	oral	solvent used in undiluted form	animals observed for a week after medication	nonfasted rats; 6-12 rats of both sexes used for studies; solvent used in undiluted form	analytical grade meeting A.C.S. specifications	Kimura ET, Ebert DM, Dodge PW. 1971. Acute toxicity and limits of solvent residue for sixteen organic solvents. Toxicol Appl Pharmacol 19:699-704. *Abbott Laboratories, Chicago, IL*
Methanol	5628	7005 (8.8 mL/kg; used density of 0.796 to convert to mg/kg)	5731 - 8597 (95% CL; 7.2 - 10.8 mL/kg)	Litchfield and Wilcoxon method and probit analysis	Sprague-Dawley rats; 300-470 g; older adult	male	oral	solvent used in undiluted form	animals observed for a week after medication	nonfasted rats; groups of 6 rats used for the studies; solvent used in undiluted form	analytical grade meeting A.C.S. specifications	Kimura ET, Ebert DM, Dodge PW. 1971. Acute toxicity and limits of solvent residue for sixteen organic solvents. Toxicol Appl Pharmacol 19:699-704. *Abbott Laboratories, Chicago, IL*
Methanol	5628	7400	NA	NA	rats; 150-250 g; 70-100 days	male (predominately)	oral	NA	observed for 6 days	18 hour fasting before dosing	NA	Welch, H, Slocum GG. 1943. Relation of length of carbon chain to the primary and functional toxicities of alcohols. J Lab Chem Med 28:1440-1445. *U.S. FDA, Washington, D.C.*
Methanol	5628	10348 (13.0 mL/kg; used density of 0.796 to convert to mg/kg)	9472 - 11303 (95% CL; 11.9 - 14.2 mL/kg)	Litchfield and Wilcoxon method and probit analysis	Sprague-Dawley rats; 80-160 g; young adult	male	oral	solvent used in undiluted form	animals observed for a week after medication	nonfasted rats; groups of 6 rats used for the studies; solvent used in undiluted form	analytical grade meeting A.C.S. specifications	Kimura ET, Ebert DM, Dodge PW. 1971. Acute toxicity and limits of solvent residue for sixteen organic solvents. Toxicol Appl Pharmacol 19:699-704. *Abbott Laboratories, Chicago, IL*

CHEMICAL[1]	LD50[2] mg/kg oral rat RTECS 2002	LD50[3] mg/kg oral rat Primary Reference	LD50[4] mg/kg (range) Primary Reference	LD50 CALCULATION METHOD[5] Primary Reference	ANIMAL INFORMATION (stock, weight, age)	GENDER	ROUTE/ METHOD OF EXPOSURE[6]	DOSE	OBSERVATIONS	NOTES	CHEMICAL SOURCE	PRIMARY REFERENCE
Methanol	5628	12086 - A 11303 - B (A = 15.28 mL/kg; B = 14.29 mL/kg; used density of 0.791 for conversion to mg/kg)	NA	A= Behrens (1929) B = Bliss (1938)	rats	NA	oral	NA	NA	40 - 90 animals used; NICEATM used value B since authors stated it was more accurate	NA	Deichmann WB, Mergard EG. 1948. Comparative evaluation of methods employed to express the degree of toxicity of a compound. J Ind Hyg Toxicol 30:373-378. *Albany Medical College, Albany, NY; University of Cincinnati, Cincinnati, OH*
Methanol	5628	12880	11440 - 14460 (95% probability; +/- 1.96 S.D. slope = 8.53)	probits (Bliss)	Wistar albino rats; 90-120 g	male	oral; stomach tube; single doses	50% concentration in water; largest dose given was 50 g/kg	most deaths occurred in 2 days; all deaths occurred in 14 days	groups of 10 animals; 10 animals per dose	purified commercial grade	Smyth HF Jr, Seaton J, Fischer, L. 1941. The single dose toxicity of some glycols and derivatives. J Ind Hyg Toxicol 23:259-268. *Mellon Institute, Pittsburgh, PA* (This was the value used by the RC [from 1977 RTECS]).
Nicotine	50	50 - 60	NA	NA	rats	NA	oral	NA	NA	reference is secondary; assumed to be values from Lehman (1951)	NA	**RTECS REFERENCE-SECONDARY SOURCE** *CODEN: FMCHA2 Bibliographic Data: Farm Chemicals Handbook. (Meister Pub., 37841 Euclid Ave., Willoughy, OH 44094) CODEN Reference: -,C219,1991;*
Nicotine	50	50 - 60	NA	NA	rats	NA	oral; stomach tube	NA	clonic convulsions; onset within minutes; paralysis of respiratory muscles and death	information from the laboratories of Division of Pharmacology, U.S. FDA.; fasted animals	NA	Lehman AJ. 1951. Chemicals in Foods: a report to the association of food and drug officials on current developments. Part II. Pesticides. Quarterly Bulletine (Association of Food and Drug Officials of the United States). Vol.15:122-133. *U.S. FDA*
Nicotine	50	68	41 -129 (95% CL; slope = 3.0 [S.E. 0.8])	acceptable methods (e.g., Bliss, Litchfield and Wilcoxon, Weil, Thompson, etc.)	Sprague-Dawley rats	male	oral gavage	single dose	14 day observation; toxicity symptoms: Ptosis, posture, respiratory effects, lethargy, abnormal gait, tremors, convulsions, prostrate coma; time to onset of signs < 1day; duration of signs 3 days; 13 rats dead (average per test)	3 dose levels (5 male each); 15 rats used; OECD TG401 (1981) followed for experimental procedures	NA	Vandenheuvel MJ, Clark DG, Fielder RJ, Koundakjian PP, Oliver GJA, Pelling D, Tomlinson NJ, Walker AP. 1990. Jul. The International Validation Of A Fixed-Dose Procedure As An Alternative To The Classical LD50 Test Food And Chemical Toxicology 28(7):469-482.
Nicotine	50	70	49 - 109 (95% CL)	acceptable methods (e.g., Bliss, Litchfield and Wilcoxon, Weil, Thompson, etc.)	Sprague-Dawley rats	male and female	oral gavage	single dose	14 day observation; toxicity symptoms: Ptosis, posture, respiratory effects, lethargy, abnormal gait, tremors, convulsions, prostrate coma; time to onset of signs < 1day; duration of signs 3 days; 13 rats dead (average per test)	3 dose levels (5 male each and 5 female); 30 rats used; OECD TG401 (1981) followed for experimental procedures	NA	Vandenheuvel MJ, Clark DG, Fielder RJ, Koundakjian PP, Oliver GJA, Pelling D, Tomlinson NJ, Walker AP. 1990. Jul. The International Validation Of A Fixed-Dose Procedure As An Alternative To The Classical LD50 Test Food And Chemical Toxicology 28(7):469-482.
Nicotine	50	70	51 - 96 (95% CL)	acceptable methods (e.g., Bliss, Litchfield and Wilcoxon, Weil, Thompson, etc.)	Sprague-Dawley rats; 190-300 g	female	oral gavage	single dose	14 day observation; toxicity symptoms: motor activity decrease, respiratory effects, tremors, blanching, piloerection, ataxia, convulsions, extension of the limbs; time to onset of signs < 1day; duration of signs 5 days; animals fasted 16 -20 hours before administration	UDP Test	NA	Yam J, Reer PJ, Bruce RD. 1991. Comparison of the up-and-down method and the fixed-dose procedure for acute oral toxicity testing. Food Chem Toxicol 29(4):259-264. *The Procter and Gamble Co., Cincinnati, OH*
Nicotine	50	71	42 - 128 (95% CL)	acceptable methods (e.g., Bliss, Litchfield and Wilcoxon, Weil, Thompson, etc.)	Sprague-Dawley rats	female	oral gavage	single dose	14 day observation; toxicity symptoms: Ptosis, posture, respiratory effects, lethargy, abnormal gait, tremors, convulsions, prostrate coma; time to onset of signs < 1day; duration of signs 3 days; 13 rats dead (average per test)	3 dose levels (5 female each); 15 rats used; OECD TG401 (1981) followed for experimental procedures	NA	Vandenheuvel MJ, Clark DG, Fielder RJ, Koundakjian PP, Oliver GJA, Pelling D, Tomlinson NJ, Walker AP. 1990. Jul. The International Validation Of A Fixed-Dose Procedure As An Alternative To The Classical LD50 Test Food And Chemical Toxicology 28(7):469-482.
Paraquat	57	57	NA	NA	rats	NA	oral	NA	NA	NA	NA	**RTECS REFERENCE** *CODEN: RREVAH Bibliographic Data: Residue Reviews. (Springer-Verlag New York, Inc., Service Center, 44 Hartz Way, Secaucus, NJ 07094) V.1- 1962- CODEN Reference: 10,97,1965.* ---- Bailey GW, White JL. 1965. Herbicides: a compilation of their physical, chemical, and biological properties. Journal paper no. 2413. Purdue University Agricultural Experiment Station. Residue Reviews 10:7-122.
Paraquat	57	95	79-114; (95 % CL)	Litchfield and Wilcoxon method (1949)	Wistar rats; 292 +/- 13 g	male	oral intubation	single dose	observe several times daily and at least once on weekends for 30 days; most of the rats that died did so within 5 days of administration; weight loss, diarrhea, piloerection and red drainage around mouth, eyes, and nose	used 29 paraquat-dichloride	Ortho Chemical Co.	Sharp CW, Ottolenghi A, Posner HS. 1972. Correlation of paraquat toxicity woth tissue concentrations and weight loss of the rat. Toxicology and Appied Pharmacology 22:241-251. *NIEHS, RTP, NC USA*
Paraquat	57	100	85 - 117 (95% CL)	Litchfield and Wilcoxon method (1949)	Sherman strain rats; min. wt. = 175 g; min. age of 90 days	male	oral; stomach tube	chemical in peanut oil; 0.005 mL/g of bw	observed hourly on first day of dosage and twice a day thereafter until time of death; max survival 14 days	50 rats tested	technical grade	Gaines TB. 1969. Acute toxicity of pesticides. Toxicol Appl Pharmacol 14(3):515-34. *U.S. Dept. of Health, Education, and Welfare, Atlanta, GA*

CHEMICAL[1]	LD50[2] mg/kg oral rat RTECS 2002	LD50[3] mg/kg oral rat Primary Reference	LD50[4] mg/kg (range) Primary Reference	LD50 CALCULATION METHOD[5] Primary Reference	ANIMAL INFORMATION (stock, weight, age)	GENDER	ROUTE/ METHOD OF EXPOSURE[6]	DOSE	OBSERVATIONS	NOTES	CHEMICAL SOURCE	PRIMARY REFERENCE
Paraquat	57	110	90 - 134 (95% CL)	Litchfield and Wilcoxon method (1949)	Sherman strain rats; min. wt. = 200 g; min. age of 90 days	female	oral; stomach tube	chemical in peanut oil; 0.005 mL/g of bw	observed hourly on first day of dosage and twice a day thereafter until time of death; max survival 13 days	50 rats tested	technical grade	Gaines TB. 1969. Acute toxicity of pesticides. Toxicol Appl Pharmacol 14(3):515-34. *U.S. Dept. of Health, Education, and Welfare, Atlanta, GA*
Paraquat	57	112 (paraquat ion per kg bw)	104-122; (95% CL)	Thompson (1947); moving average interpolation method	rats; 130-160 g	male and female	oral; in food	single dose; mixed salt of paraquat in food with 20% malt extract and fed to rats	fasted overnight; observed up to 12 days	6 rats per group	99.9% pure paraquat dichloride	Clark DG, McElligott TF, Hurst EW. 1966. The toxicity of paraquat. Br J Ind Med 23:126-132. *Imperial Chemical Industries Limited, Cheshire, UK*
Paraquat	57	115	90-150; (95% CL)	Litchfield and Wilcoxin method (1949)	Sprague Dawley rat; 290 +/- 37 g	male	oral intubation	single dose	observe several times daily and at least once on weekends for 30 days; most of the rats that died did so within 5 days of administration; weight loss, diarrhea, piloerection and red drainage around mouth, eyes, and nose	used 29 paraquat-dichloride	Ortho Chemical Co.	Sharp CW, Ottolenghi A, Posner HS. 1972. Correlation of paraquat toxicity woth tissue concentrations and weight loss of the rat. Toxicology and Appied Pharmacology 22:241-251. *NIEHS, RTP, NC USA*
Paraquat	57	141 (paraquat ion per kg bw)	140-142 (95% CL)	Thompson (1947); moving average interpolation method	rats; 130-160 g	male and female	oral; in food	single dose; mixed salt of paraquat in food with 20% malt extract and fed to rats	fasted overnight; observed up to 12 days	6 rats per group	99.9% pure paraquat dimethosulfate	Clark DG, McElligott TF, Hurst EW. 1966. The toxicity of paraquat. Br J Ind Med 23:126-132. *Imperial Chemical Industries Limited, Cheshire, UK*
Paraquat	57	150 (paraquat ion per kg bw)	139-162 (95% CL)	Thompson (1947); moving average interpolation method	rats; 150-205 g	male and female	oral; in food	single dose; mixed salt of paraquat in food with 20% malt extract and fed to rats	fasted overnight; observed up to 12 days	10 rats per group	99.9% pure paraquat dichloride	Clark DG, McElligott TF, Hurst EW. 1966. The toxicity of paraquat. Br J Ind Med 23:126-132. *Imperial Chemical Industries Limited, Cheshire, UK*
Parathion	2	1.8 (actual value)	1.26 - 2.57 (95% CL; slope = 1.5 [1.0 - 2.25 95% CL])	Litchfield and Wilcoxin method (1949)	Osborne-Mendel (?) rats	female	oral	5 dose levels; constant vol. dose of solvent of 5 mL/kg; single dose; aqueous solution (sodium carboxymethyl-cellulose, 0.5%; NaCl, 0.9%; benzyl alcohol, 0.2% v/v; Tween 80, 0.4%)	observed for 24 hours; deaths infrequent after 24 hour; onset of anticholinesterase poisoning syptoms slower with corn oil than DMSO or aqueous	fasted for 20 hours	NA	**RTECS REFERENCE** *CODEN: TXAPA9 Bibliographic Data: Toxicology and Applied Pharmacology. (Academic Press, Inc., 1 E. First St., Duluth, MN 55802) V.1- 1959- CODEN Reference: 11, 546, 1967.* ---- Weis LR, Orzel RA. 1967. Some comparative toxicologic and pharmacologic effects of dimethyl sulfoxide as a pesticide solvent. Toxicology and Applied Pharmacology 11:546-557. *U.S. FDA, Washington, D.C.*
Parathion	2	2.1	1.72 - 2.56 (95% CL; slope = 1.25 [1.01 - 1.55 95% CL])	Litchfield and Wilcoxon method (1949)	Osborne-Mendel (?) rats	female	oral	5 dose levels; constant vol. dose of solvent of 5 mL/kg; single dose; cmpd dissolved in DMSO (industrial grade, 99% pure)	observed for 24 hours; deaths infrequent after 24 hour; onset of anticholinesterase poisoning syptoms slower with corn oil than DMSO or aqueous	fasted for 20 hours	NA	Weis LR, Orzel RA. 1967. Some comparative toxicologic and pharmacologic effects of dimethyl sulfoxide as a pesticide solvent. Toxicology and Applied Pharmacology 11:546-557. *U.S. FDA, Washington, D.C.*
Parathion	2	3	NA	NA	rats	NA	oral; stomach tube	NA	generalized fibrillary tremors, salivation, lacrimation, diarrhea, and convulsions; onset within 1 hour	information from the laboratories of Division of Pharmacology, U.S. FDA.; fasted animals; LD50 value is from research by Frawley et al. 1952	NA	Lehman AJ. 1951. Chemicals in Foods: a report to the association of food and drug officials on current developments. Part II. Pesticides. Quarterly Bulletine (Association of Food and Drug Officials of the United States). Vol.15:122-133. *U.S. FDA*
Parathion	2	3	+/- 0.25 (S.E.)	Litchfield and Fertig (1941)	Osborne-Mendel strain rats; 180-200 g	female	oral; stomach tube	cmpd in corn oil	toxicity symptoms: muscle fibrillation, red colored lacrimation, diarrhea, dyspnea, convulsions; respiratory paralysis, anoxia, terminal convulsion	rats fasted for 24 hours; LD50 value was used in Lehman 1951	NA	Frawley JP, Hagan EC, Fitzhugh OG. 1952. A comparative pharmacological and toxicological study of organic phosphate-anticholinesterase compounds. J Pharmacol Exp Ther 152:156-165. *U.S. FDA, Washington, D.C.*

CHEMICAL[1]	LD50[2] mg/kg oral rat RTECS 2002	LD50[3] mg/kg oral rat Primary Reference	LD50[4] mg/kg (range) Primary Reference	LD50 CALCULATION METHOD[5] Primary Reference	ANIMAL INFORMATION (stock, weight, age)	GENDER	ROUTE/ METHOD OF EXPOSURE[6]	DOSE	OBSERVATIONS	NOTES	CHEMICAL SOURCE	PRIMARY REFERENCE
Parathion	2	3.6	3.2 - 4.0 (95% CL)	Litchfield and Wilcoxin method (1949)	Sherman strain rats; min. wt. = 200 g; min. age of 90 days	female	oral; stomach tube	chemical in peanut oil; 0.005 mL/g of bw	observed hourly on first day of dosage and twice a day thereafter until time of death; max survival 3 days	70 rats tested	technical grade	Gaines TB. 1960. The acute toxicity of pesticides to rats. Toxicol Appl Pharmacol 2:88-99. *U.S. Dept. of Health, Education, and Welfare, Savannah, GA* ---- Mattson AM, Spillane JT, Pearce GW. 1955. Dimethyl 2,2-dichlorvinyl phosphate (DDVP), an organic phosphorous compound highly toxic to insects. J Agr Food Chem 3:319-321. *Communicable Disease Center, Savannah, GA*
Parathion	2	3.6	3.2 - 4.0 (95% CL)	Litchfield and Wilcoxin method (1949)	Sherman albino rats	female	oral; stomach tube	NA	NA	LD50 value from research in Gaines 1960	NA	Durham WF, Gaines TB, McCauley RH, Sedlak VA, Mattson MA, Hayes WJ. 1957. Studies on the toxicity of 0,0-dimethyl-2,2-dichlorovinyl phosphate (DDVP). AMA Arch Ind Health 15:340-349. *U.S. Dept. of Health, Education and Welfare, Savannah, GA*
Parathion	2	4.7	3.98 - 5.55 (95% CL; slope = 1.21 [0.98 - 1.50 95% CL])	Litchfield and Wilcoxin method (1949)	Osborne-Mendel (?) rats	female	oral	5 dose levels; constant vol. dose of solvent of 5 mL/kg; single dose; cmpd dissolved in corn oil mixture (90% corn oil, 10% N, N-dimethyl formamide)	observed for 24 hours; deaths infrequent after 24 hour; onset of anticholinesterase poisoning syptoms slower with corn oil than DMSO or aqueous	fasted for 20 hours	NA	Weis LR, Orzel RA. 1967. Some comparative toxicologic and pharmacologic effects of dimethyl sulfoxide as a pesticide solvent. Toxicology and Applied Pharmacology 11:546-557. *U.S. FDA, Washington, D.C.*
Parathion	2	6	4.6 - 7.8 (95% CL)	Litchfield and Wilcoxin method (1949)	CD (COBS) rats Charles River, France; 120-200 g	female	oral gavage	cmpd dissolved in 1 mL methylene chloride; emulsified in 10% arabic gum solution with Tween 80; dose 5 mL/kg	LD50 determined after 10 days of observation	5 dose levels; 10 female per dose; 50 rats used	95+% pure	Pasquet J, Mazuret A, et al. 1976. Acute oral and percutaneous toxicity of phosalone in the rat, in comparison with azinphosmethyl and parathion. Toxicol Appl Pharmacol 37(1):85-92. *Rhone-Poulenc, France*
Parathion	2	10	8 - 13 (95% CL)	Litchfield and Wilcoxin method (1949)	CD (COBS) rats Charles River, France; 120-200 g	male and female	oral gavage	cmpds dissolved in 1 mL methylene chloride and emulsified in 10% arabic gum solution with Tween 80; dose 5mL/kg	LD50 determined after 10 days of observation	5 dose levels; 10 male and 10 female per dose; 100 rats used	95+% pure	Pasquet J, Mazuret A, et al. 1976. Acute oral and percutaneous toxicity of phosalone in the rat, in comparison with azinphosmethyl and parathion. Toxicol Appl Pharmacol 37(1):85-92. *Rhone-Poulenc, France*
Parathion	2	13	10 - 17 (95% CL)	Litchfield and Wilcoxin method (1949)	Sherman strain rats; min. wt. = 175 g; min. age of 90 days	male	oral; stomach tube	chemical in peanut oil; 0.005 mL/g of bw	observed hourly on first day of dosage and twice a day thereafter until time of death; max survival 3 days	50 rats tested	technical grade	Gaines TB. 1960. The acute toxicity of pesticides to rats. Toxicol Appl Pharmacol 2:88-99. *U.S. Dept. of Health, Education, and Welfare, Savannah, GA* ---- Mattson AM, Spillane JT, Pearce GW. 1955. Dimethyl 2,2-dichlorvinyl phosphate (DDVP), an organic phosphorous compound highly toxic to insects. J Agr Food Chem 3:319-321. *Communicable Disease Center, Savannah, GA*
Parathion	2	15	10.2 - 16.5 (95% CL)	Litchfield and Wilcoxin method (1949)	Sherman albino rats	male	oral; stomach tube	NA	NA	LD50 value from research in Gaines 1960	NA	Durham WF, Gaines TB, McCauley RH, Sedlak VA, Mattson MA, Hayes WJ. 1957. Studies on the toxicity of 0,0-dimethyl-2,2-dichlorovinyl phosphate (DDVP). AMA Arch Ind Health 15:340-349. *U.S. Dept. of Health, Education and Welfare, Savannah, GA*
Parathion	2	16	13 - 20 (95% CL)	Litchfield and Wilcoxin method (1949)	CD (COBS) rats Charles River, France; 120-200 g	male	oral gavage	cmpds dissolved in 1 mL methylene chloride and emulsified in 10% arabic gum solution with Tween 80; dose 5 mL/kg	LD50 determined after 10 days of observation	5 dose levels; 10 male per dose; 50 rats used	95+% pure	Pasquet J, Mazuret A, et al. 1976. Acute oral and percutaneous toxicity of phosalone in the rat, in comparison with azinphosmethyl and parathion. Toxicol Appl Pharmacol 37(1):85-92. *Rhone-Poulenc, France*
Parathion	2	30	+/- 3.6 (S.E.)	Litchfield and Fertig (1941)	Osborne-Mendel strain rats; 180 - 200 g	male	oral; stomach tube	cmpd in corn oil;	toxicity symptoms: muscle fibrillation, red colored lacrimation, diarrhea, dyspnea, convulsions; respiratory paralysis, anoxia, terminal convulsion	rats fasted for 24 hours;	NA	Frawley JP, Hagan EC, Fitzhugh OG. 1952. A comparative pharmacological and toxicological study of organic phosphate-anticholinesterase compounds. J Pharmacol Exp Ther 152:156-165. *U.S. FDA, Washington, D.C.*
Phenobarbital	162	162	+/- 14	NA	Wistar rats; adult	NA	oral	NA	NA	information from: drug applications from pharmaceutical manufacturers, the literature, and FDA labs	NA	**RTECS REFERENCE** *CODEN: TXAPA9 Bibliographic Data: Toxicology and Applied Pharmacology. (Academic Press, Inc., 1 E. First St., Duluth, MN 55802) V.1- 1959- CODEN Reference: 18,185,1971* ---- Goldenthal EI. 1971. A compilation of LD50 values in newborn and adult animals. Toxicology and Applied Pharamacology 18:185-207. *Bureau of Drugs, Food and Drug Administration, Dept. of Health, Education, and Welfare, Rockville, MD.*
Phenobarbital	162	220	NA	NA	MJ rats; 80 - 100 days	NA	oral	NA	NA	information from: drug applications from pharmaceutical manufacturers, the literature, and FDA labs	NA	Goldenthal EI. 1971. A compilation of LD50 values in newborn and adult animals. Toxicology and Applied Pharamacology 18:185-207. *Bureau of Drugs, Food and Drug Administration, Dept. of Health, Education, and Welfare, Rockville, MD.*
Phenobarbital	162	318	+/- 23 (S.E.)	Miller and Tainter (1944)	Charles River CD and Sprague-Dawley rat strains; > 100 g; adult	NA	oral intubation; up to 50 mL/kg	NA	rats observed for 7 days; observed up to 14 days when heavy metals or other cmpds that produce latent death were investigated	fasted overnight	NA	Yeary RA, Benish RA, Finkelstein M. 1966. Acute Toxicity of Drugs in Newborn Animals. Journal of Pediatrics 69 (4):663-667. *Dept. of Veterinary Preventive Medicine, Ohio State University, Columbus, OH*

CHEMICAL[1]	LD50[2] mg/kg oral rat RTECS 2002	LD50[3] mg/kg oral rat Primary Reference	LD50[4] mg/kg (range) Primary Reference	LD50 CALCULATION METHOD[5] Primary Reference	ANIMAL INFORMATION (stock, weight, age)	GENDER	ROUTE/ METHOD OF EXPOSURE[6]	DOSE	OBSERVATIONS	NOTES	CHEMICAL SOURCE	PRIMARY REFERENCE
Phenol	317	317 (0.30 cc/kg of drug lethal to 50% of rats; density = 1.055)	NA	graphically	white rats	NA	oral; stomach tube	5% ethylene glycol added to phenol to liquify it so that it would pass through the stomach tube	most rats died within 2 - 6 hour; practically all dead within 8 - 12 hour; convulsions began several minutes after dosing and continued for several hours	NA	NA	**RTECS REFERENCE** *CODEN: GISAAA Bibliographic Data: Gigiena i Sanitariya. For English translation, see HYSAAV. (V/O Mezhdunarodnaya Kniga, 113095 Moscow, USSR) V.1- 1936- CODEN Reference: 41(6),103,1976.* Brown HW, Lamson PD. 1935. Oral Toxicity of Ortho-n-alkylphenols to White Rats. Proc Soc Exp Biol Med 32:592-594.
Phenol	317	340	NA	NA	Wistar rats; 100-200 g	male and female	oral	20% aqueous emulsion 0.3, 0.4, 0.5 g/kg doses	45 rats used; 30 dead; death within 1 hour; twitching, weak pulse and respiration, salivation, dyspnea	45 rats used (equal numbers of male and female used)	Merck reagent quality	Deichmann WB, Witherup S. 1944. Phenol Studies VI: the acute and comparative toxicity of phenol and o-, m-, and p-cresols for experimental animals. J of Pharmacol and Exp Therapeutics 80:233-240. *College of Medicine, University of Cincinnati, Cincinnati, OH.*
Phenol	317	400	297 - 539 (95% CL)	Dixon (1965) and Bruce (1985)	Fischer 344 rats; 77 days old at test	female	oral gavage	in deionized water; maximum volume dose 10mL/kg; 5 dose levels: 0, 12, 40, 120, 224 mg/kg; single dose	7 day survival time	fasted overnight; initial dose levels were 100, 1000, and 5000 mg/kg; subsequent doses selected by up-and-down method (Bruce, 1985, 1987); 5 groups of 8 rats each; 40 rats used; 7 -15 rats used in first LD50 estimate	analytical grad_; 99+% pure; Aldrich Chemical Co.	Berman E, Schlicht M, Moser VC, MacPhail RC. 1995. A multidisciplinary approach to toxicological screening: I. Systemic toxicity. J Toxicol Environ Health 45(2): 127-43. *Health Effects Res. Lab., U.S.EPA, Research Triangle Park, NC*
Phenol	317	445	NA	Probit method	Sprague-Dawley rats; 190-200 g	female	oral	geometric progression of 14 for dosing; in water or neat	9 dead; observed for 14 days	non-fasted; 4 groups of 5 female; 20 rats used	Polysciences, Inc. Warrington, PA	Thompson ED, Gibson DP. 1984. A method for determining the maximum tolerated dose for acute in vivo cytogenetic studies. Food Chem Toxicol 22(8):665-76. *The Procter and Gamble Co., Cincinnati, OH*
Phenol	317	512	455 - 568	NA	rats; 220 +/- 40 g	NA	oral; intragastric	NA	NA	(source of information not provided)	NA	Izmerov NF, Sanotsky IV, Sidorov KK. 1982. Toxicometric Parameters of Industrial Toxic Chemicals under Single Exposure. International Register of Potentially Toxic Chemicals (IRPTC). United Nations Environment Programme (UNEP). Centre of International Projects, GKNT. Moscow, Russia.
Phenol	317	520	NA	Probit method	Sprague-Dawley rats; 190-200 g	male	oral	geometric progression of 14 for dosing; in water or neat	10 dead; observed for 14 days	non-fasted; 3 groups of 5 male; 1 group of 10 male; 25 rats used	Polysciences, Inc. Warrington, PA	Thompson ED, Gibson DP. 1984. A method for determining the maximum tolerated dose for acute in vivo cytogenetic studies. Food Chem Toxicol 22(8):665-76. *The Procter and Gamble Co., Cincinnati, OH*
Phenol	317	530	NA	NA	Wistar rats; 100-200 g	male and female	oral	2% aqueous solution; 0.4, 0.5, 0.6, 0.7, 0.8 g/kg doses	45 rats used; 32 dead; death within 3 hours; twitching, weak pulse and respiration, salivation, dyspnea	45 rats used (equal numbers of male and female used)	Merck reagent quality	Deichmann WB, Witherup S. 1944. Phenol Studies VI: the acute and comparative toxicity of phenol and o-, m-, and p-cresols for experimental animals. J of Pharmacol and Exp Therapeutics 80:233-240. *College of Medicine, University of Cincinnati, Cincinnati, OH.*
Phenol	317	530	NA	NA	Wistar rats; 100-200 g	male and female	oral	5% aqueous solution; 0.4, 0.5, 0.6, 0.7 g/kg doses	45 rats used; 27 dead; death within 80 minutes twitching, weak pulse and respiration, salivation, dyspnea	45 rats used (equal numbers of male and female used)	Merck reagent quality	Deichmann WB, Witherup S. 1944. Phenol Studies VI: the acute and comparative toxicity of phenol and o-, m-, and p-cresols for experimental animals. J of Pharmacol and Exp Therapeutics 80:233-240. *College of Medicine, University of Cincinnati, Cincinnati, OH.*
Phenol	317	540	NA	NA	Wistar rats; 100-200 g	male and female	oral	10% aqueous emulsion 0.5, 0.6, 0.7, 0.8 g/kg doses	40 rats used; 28 dead; death within 120 minutes; twitching, weak pulse and respiration, salivation, dyspnea	40 rats used (equal numbers of male and female used)	Merck reagent quality	Deichmann WB, Witherup S. 1944. Phenol Studies VI: the acute and comparative toxicity of phenol and o-, m-, and p-cresols for experimental animals. J of Pharmacol and Exp Therapeutics 80:233-240. *College of Medicine, University of Cincinnati, Cincinnati, OH.*
Phenol	317	550 - A 530 - B	NA	A= Behrens (1929) B = Bliss (1938)	rats	NA	oral	2% aqueous solution	NA	41 - 90 animals used; NICEATM used value B since authors stated it was more accurate	NA	Deichmann WB, Mergard EG. 1948. Comparative evaluation of methods employed to express the degree of toxicity of a cmpd. J Ind Hyg Toxicol 30:373-378. *Albany Medical College, Albany, NY; University of Cincinnati, Cincinnati, OH*
Phenol	317	580 - A 540 - B	NA	A= Behrens (1929) B = Bliss (1938)	rats	NA	oral	10% aqueous solution	NA	42 - 90 animals used; NICEATM used value B since authors stated it was more accurate	NA	Deichmann WB, Mergard EG. 1948. Comparative evaluation of methods employed to express the degree of toxicity of a compound. J Ind Hyg Toxicol 30:373-378. *Albany Medical College, Albany, NY; University of Cincinnati, Cincinnati, OH*
Phenol	317	550 - 650	NA	NA	Normal albino rats	male and female	oral	single doses in mg/kg: 400, 450, 500, 550, 600, 650, 700; phenol as 5% aqueous solution	dose (mg/kg), percent mortality, minutes till death: 400, 10%, 20; 450, 20%, 10 to 80; 500, 30%, 10 to 30; 500, 30%, 10 to 30; 550, 50%, 5 to 90; 600, 60%, 3 to 8; 650, 60%, 4 to 60; 700, 90%, 4 to 50; 500 mg/kg repeated in reference paper	rats divided into 5 test groups and 1 control; 10 rats per group; 80 rats used	NA	Deichmann W, Oesper P. 1940. Ingestion of phenol: effects on the albino rat. Industr Med 9:296-298.
Phenol	317	650	490 - 860 (95% CL)	NA	albino rats	male	oral; stomach intubation	4 doses: 200, 398, 795, 1580 mg/kg; single dose	observed for 14 days; 9 of 20 rats dead; dose (mg/kg), rats dead: 200 - 0/5; 398 - 0/5; 795 - 4/5 (dead within 1 day after dosing); 1580 - 5/5 (dead < 2 hour after dosing)	4 groups of 5 rats; 20 rats used; test procedures were those outlined in the Federal Hazardous Substances Act (FSHA) as published in the Federeal Register 8/12/61, pages 7333-7341, entitled "Part 191 - Hazardous Substances: Definitions and Procedural and Interpretive Regulations, Final Order"	Fisher Scientific Co.	Flickinger CW. 1976. The benzenediols: catechol, resorcinol and hydroquinone -- a review of the industrial toxicoloogy and current industrial exposure limits. Am Ind Hyg Assoc J 37:596-606. *Koppers Company, Inc., Monroeville, PA*
Phenol	317	1030	940 - 1120	NA	albino rats; 90-120 g	male	oral; stomach tube	5% phenol solution in water; single dose	observed for 14 days; 10 rats dead	non-fasted; 4 groups of 10 rats	rwagent grade	from EPA TSCATS database; Acute Toxicity of Phenol (1949), EPA Document No. 86-870001405 Fiche No. OTS0515567 *Mellon Institute of Industrial research, Univ. of Pittsburgh, Pittsburgh, PA*

CHEMICAL[1]	LD50[2] mg/kg oral rat RTECS 2002	LD50[3] mg/kg oral rat Primary Reference	LD50[4] mg/kg (range) Primary Reference	LD50 CALCULATION METHOD[5] Primary Reference	ANIMAL INFORMATION (stock, weight, age)	GENDER	ROUTE/ METHOD OF EXPOSURE[6]	DOSE	OBSERVATIONS	NOTES	CHEMICAL SOURCE	PRIMARY REFERENCE
Phenol	317	1460 - A 1500 - B	NA	A= Behrens (1929) B = Bliss (1938)	rats	NA	oral	10% solution in olive oil	NA	40 - 90 animals used; NICEATM used value B since authors stated it was more accurate	NA	Deichmann WB, Mergard EG. 1948. Comparative evaluation of methods employed to express the degree of toxicity of a cmpd. J Ind Hyg Toxicol 30:373-378. *Albany Medical College, Albany, NY; University of Cincinnati, Cincinnati, OH*
Phenylthiourea	3	3.1	NA	NA	rats		oral	NA	NA	value cited from unknown reference	NA	**RTECS REFERENCE** *CODEN: JMPCAS Bibliographic Data: Journal of Medicinal and Pharmaceutical Chemistry. (Washington, DC) V.1-5, 1959-62. For publisher information, see JMCMAR. CODEN Reference: 4,109,1961.* ---- Scheline RR, Smith RL, Williams RT. 1961. The metabolism of arylthioureas -- II. The metabolism of ^{14}C- and ^{35}S-labelled 1-phenyl-2-thiourea and its derivatives. Journal of Medicinal and Pharmaceutical Chemistry 4(1):109-134. *University of London, UK*
Phenylthiourea	3	< 21.5	NA	NA	Fischer rats; 6 weeks	male and female	oral intubation	NA	observed up to 14 days	NA	NA	Carcinogenesis bioassay of environmental chemicals annual progress report NIH-NCI-E-C-72-3252. 5/13/71 -- 8/6/73 and Final report NIH-NCI-E-71-2146. Submitted to The National Cancer Institute, National Institutes of Health, Bethesda, MD. 8/15/73 (revised 8/10/73). *Litton Bionetics, Inc. Bethesda, MD.*
Physostigmine (Eserine)	4.5	4.5	NA	NA	rat	NA	oral	NA	NA	NA	NA	**RTECS REFERENCE** *Alisi MA, Brufani M, Cesta MC, Filocamo L, Gostoli G, Lappa S, et al. 1994. U.S. Patent 5,302,593. Aminoalkylcarbamic esters of eseroline suitable for use as cholinesterase activity inhibitors (April 12, 1994).*
Potassium I chloride	2600	2600	2330 - 2900	Bliss method	Wistar rats; 110-140 g	male	oral gavage	approximately 5 doses; in water or oil solution	14 day observation period;	reference in Czechoslovakian; intro to reference in English; generally 10 animals per dose; up to 50 rats used	NA	**RTECS REFERENCE-CZECHOSLOVAKIAN** *CODEN: 28ZPAK Bibliographic Data: "Sbornik Vysledku Toxixologickeho Vysetreni Latek A Pripravku," Marhold, J.V., Institut Pro Vychovu Vedoucicn Pracovniku Chemickeho Prumyclu Praha, Czechoslovakia, 1972 CODEN Reference: -,8,1972.*
Potassium I chloride	2600	3020	+/- 140 (S.E.)	Croxton (1953) Least squares linear regression.	Wistar albino rats; adult	female	oral; stomach tube	in distilled water: 0, 2.1, 2.4, 2.7, 3.3, 3.6, and 3.9 g/kg bw doses; volume of 20 mL/kg bw	respiratory failure, convulsions, gastroenteritis, anorexia, polydipsia, polyurea, fever; 14 day observation; death occurred in approximately half the rats	109 female rats used; fasted for 16 hours	NA	Boyd EM, Shanas MN. 1961. The Acute Oral Toxicity of Potassium Chloride. Arch Int Pharmacodyn 133:275. *Queen's University, Kingston, Ontario, Canada*
Potassium cyanide	5	5	NA	Rosiello (1979) and Bliss (1938)	rats	male	oral	2, 4, 9, 14 mg/kg	2 mg/kg: 0/11 dead; 4 mg/kg:2/11 dead; 9 mg/kg:10/11 dead; 14 mg/kg:11/11 dead; 23 of 44 rats dead; LD50 based on groups containing 3 and 5 rats	acclimated for 5 days; observed for 14 days; 4 groups used for each dose (1, 2, 3, 5 animals per group; total of 11 rats per dose); 9 rats used for initial range finding	NA	**RTECS REFERENCE** *CODEN: ARTODN Bibliographic Data: Archives of Toxicology. (Springer-Verlag, Heidelberger Pl. 3, D-1000 Berlin 33, Fed. Rep. Ger.) V.32- 1974- CODEN Reference: 54,275,1983.* ---- Lorke D. 1983. A new approach to practical acute toxicity testing. Arch Toxicol 54(4):275-288. *Institut fur Toxikologie, Wuppertal, Federal Republic of Germany*
Potassium cyanide	5	5	NA	Rosiello (1979) and Bliss (1938)	rats	male	oral	2, 4, 9, 14 mg/kg	2 mg/kg: 0/3 dead; 4 mg/kg: 1/3 dead; 9 mg/kg: 3/3 dead; 14 mg/kg: 3/3 dead; 7 of 12 rats dead; LD50 based on 12 rats used; used same rats as experiments using 44 or 20 rats	acclimated for 5 days; observed for 14 days; 4 groups used for each dose (1, 2, 3, 5 animals per group; total of 11 rats per dose); 9 rats used for initial range finding	NA	Lorke D. 1983. A new approach to practical acute toxicity testing. Arch Toxicol 54(4):275-288. *Institut fur Toxikologie, Wuppertal, Federal Republic of Germany*
Potassium cyanide	5	5	NA	Rosiello (1979) and Bliss (1938)	rats	male	oral	2, 4, 9, 14 mg/kg	2 mg/kg: 0/5 dead; 4 mg/kg: 1/5 dead; 9 mg/kg: 5/5 dead; 14 mg/kg: 5/5 dead; 11 of 20 rats dead; LD50 based on 20 rats used	acclimated for 5 days; observed for 14 days; 4 groups used for each dose (1, 2, 3, 5 animals per group; total of 11 rats per dose); 9 rats used for initial range finding	NA	Lorke D. 1983. A new approach to practical acute toxicity testing. Arch Toxicol 54(4):275-288. *Institut fur Toxikologie, Wuppertal, Federal Republic of Germany*
Potassium cyanide	5	6	NA	Rosiello (1979) and Bliss (1938)	rats	male	oral	2, 4, 9, 14 mg/kg	2 mg/kg: 0/1 dead; 4 mg/kg: 0/1 dead; 9 mg/kg:1/1 dead; 14 mg/kg:1/1 dead; 2 of 4 rats dead; LD50 based on 4 rats used; used same rats as experiments using 44 rats	acclimated for 5 days; observed for 14 days; 4 groups used for each dose (1, 2, 3, 5 animals per group; total of 11 rats per dose); 9 rats used for initial range finding	NA	Lorke D. 1983. A new approach to practical acute toxicity testing. Arch Toxicol 54(4):275-288. *Institut fur Toxikologie, Wuppertal, Federal Republic of Germany*
Potassium cyanide	5	6	NA	Rosiello (1979) and Bliss (1938)	rats	male	oral	2, 4, 9, 14 mg/kg	2 mg/kg: 0/11 dead; 4 mg/kg:2/11 dead; 9 mg/kg:10/11 dead; 14 mg/kg:11/11 dead; 23 of 44 rats dead; LD50 based on all rats used (44); summary data from four tests; Test 1 = 4 rats; test 2 = 8 rats; test 3 = 12 rats; test 4 = 20 rats	acclimated for 5 days; observed for 14 days; 4 groups used for each dose (1, 2, 3, 5 animals per group; total of 11 rats per dose); 9 rats used for initial range finding	NA	Lorke D. 1983. A new approach to practical acute toxicity testing. Arch Toxicol 54(4):275-288. *Institut fur Toxikologie, Wuppertal, Federal Republic of Germany*

CHEMICAL[1]	LD50[2] mg/kg oral rat RTECS 2002	LD50[3] mg/kg oral rat Primary Reference	LD50[4] mg/kg (range) Primary Reference	LD50 CALCULATION METHOD[5] Primary Reference	ANIMAL INFORMATION (stock, weight, age)	GENDER	ROUTE/ METHOD OF EXPOSURE[6]	DOSE	OBSERVATIONS	NOTES	CHEMICAL SOURCE	PRIMARY REFERENCE
Potassium cyanide	5	7.26	6.50 - 8.09	Bliss-Probit method	Sprague-Dawley rats; 5 weeks	male	oral gavage	dissolved in saline; range (mg/kg) of doses 4.9, 5.8, 7.0, 8.4, 10.1, 12.1	rats observed at 6 hours after dosing and a once a day for 1-2 weeks; most dead within 3 days; 33/60 rats died; toxic symptoms: decrease in spontaneous movement, abdominal posture, apsychia and hyperventilation within seconds or minutes of all rats dosed with 84 mg/kg or greater; in all dead rats, convulsion due to asphyxia; dose (mg/kg), dead rats per dose: 49-0/10; 58 3/10; 70-5/10; 84-7/10; 101-8/10; 121-10/10	animals acclimated to environment for 1 week before testing; 6 groups of 10 rats each; fasted 16 hours before dosing; 100% mortality = 12.1 mg/kg; 0% mortality = 4.9 mg/kg	Wako Pure Chemicals Co.	Kitagawa H, Saito H, Sugimoto T, Yanaura S, Kitagawa H, Hosokawa T, Sakamoto K. 1982. Effects of diiospropyl-1,3-dithiol-2-ylidene malonate (NKK-105) on acute toxicity of various drugs and heavy metals. J Toxicol Sci 7(2):123-34. *Chiba University; Hoshi College of Pharmacy; Showa University -- Japan*
Potassium cyanide	5	9	NA	Rosiello (1979) and Bliss (1938)	rats	male	oral	2, 4, 9, 14 mg/kg	2 mg/kg: 0/2 dead; 4 mg/kg: 0/2 dead; 9 mg/kg: 1/2 dead; 14 mg/kg: 2/2 dead; 3 of 8 rats dead; LD50 based on 8 rats used	acclimated for 5 days; observed for 14 days; 4 groups used for each dose (1, 2, 3, 5 animals per group; total of 11 rats per dose); 9 rats used for initial range finding	NA	Lorke D. 1983. A new approach to practical acute toxicity testing. Arch Toxicol 54(4):275-288. *Institut fur Toxikologie, Wuppertal, Federal Republic of Germany*
Potassium cyanide	5	10	8.7 - 11.5 (95% CL)	Litchfield and Wilcoxin method (1949)	Sherman strain rats; min. wt. = 175 g; min. age of 90 days	male	oral; stomach tube	chemical in peanut oil; 0.005 mL/g of bw	observed hourly on first day of dosage and twice a day thereafter until time of death; max survival = died within 1 hour	50 rats tested	technical grade	Gaines TB. 1969. Acute toxicity of pesticides. Toxicol Appl Pharmacol 14(3):515-34. *U.S. Dept. of Health, Education, and Welfare, Atlanta, GA*
Potassium cyanide	5	10	9 - 12 (95% CL; slope = 14.5)	Finney (1971)	Crl: CD rats; ave bw = 243-251 g; young adult	male	oral; intragastric intubation	single dose as suspension in corn oil (0.1% suspension); 5, 8, 10, 15 mg/kg dose; dose = 126-377 mL	observed for 14 days; 16 rats dead; all deaths occurred within 1 hour; convulsions, tremors, fascilations, gasping, lethargy, weakness, hyperemia, weight loss	4 groups of 10 rats	NA	from EPA TSCATS database; INITIAL SUBMISSION: ORAL LD50 TEST OF POTASSIUM CYANIDE IN RATS WITH COVER LETTER DATED 08/10/92; EPA Document No. 88-920009041 Fiche No. OTS0555358; *E.I Dupont DeNemours & Co., Inc./Haskell Labs*
Procainamide	1950	1950	NA	NA	rats	NA	oral	NA	NA	no source given for LD50 value	NA	**RTECS REFERENCE** *CODEN: CCCCAK Bibliographic Data: Collection of Czechoslovak Chemical Communications. (Academic Press Inc. Ltd., 24-28 Oval Rd., London NW1 7DX, UK) V.1- 1929- CODEN Reference: 42,3628,1977.* ---- Protiva M, Valenta V, Trcka V, Hladovec J, Nemec J. 1977. Basic amided of 3,4,5-trimethoxyphenoxyacetic acid; synthesis and phaarmacology of trimethoxamide and analogues. Collection of Czechoslovak Chemical Communications 42:3628-3642. *Research Institute for Pharmacy and Biochemistry, Prague, Czechoslovakia*
Procainamide	1950	> 2000	NA	Litchfield and Wilcoxon method or Thompson method	Wistar rats	male	oral	single dose	NA	20 rats used	NA	Turba C, Sanna GP, Bianchi C. 1968. 1: Acute toxicity and general pharmacologic properties of 1,5-dimorpholino-3-(1-naphthyl)-pentane: DA 1686. Arzneimittelforschung Sep. 18(9):1127-1132. *LABORATORI RICERCHE ISTITUTO DE ANGLELI, MILANO, ITALY*
Propranolol HCl	466	466	NA	Litchfield and Wilcoxon method	Sprague-Dawley rats; 2 months	male	gastric intubation; single high oral doses	NA	determined at 10 days by administering po to groups of 5 animals for each dose a series of doses increasing serially by a factor of 2	fasted 12 hour before dosing	pharmaceutical grade	**RTECS REFERENCE** *CODEN: ARZNAD Bibliographic Data: Arzneimittel-Forschung. Drug Research. (Editio Cantor Verlag, Postfach 1255, W-7960 Aulendorf, Fed. Rep. Ger.) V.1-1951- CODEN Reference: 35,1236,1985* ----- Maura A, Carlo P, et al. 1985. Absence of DNA damage in mice and rats given high doses of five beta- adrenergic blocking agents. Arzneimittelforschung 35(8):1236-1238. *University of Genova, Italy*
Propylparaben	6332 (mouse oral) no rat oral data	6332 (mouse)	5740 - 6984 (S.E.)	NA	dd strain mice	NA	oral	NA	NA	NA	NA	**RTECS REFERENCE--MOUSE ORAL** *Sado I. 1973. Synergistic toxicity of officially permitted food preservatives. Nippon Eiseigaku Zasshi 28(5):463-476.*
Propylparaben	6332 (mouse oral) no rat oral data	> 8000 (mouse)	NA	Miller and Tainter (1944)	uniform strain of albino mice from a single source	NA	oral	suspended in 3% starch, proplene glycol, or olive oil	rapid onset of ataxia, deep depression resembling anesthesia; deaths usually occurred within 1 hour; recovery from nonfatal doses seldom lasted > 30 minutes	fasted 12 hour prior to dosing	NA	Matthews C, Davidson J, Bauer E, Morrison JL, Richardson AP. 1956. p-Hydroxybenzoic acide esters as preservatives II. Acute and chronic toxicity in dogs, rats, and mice. J Am Pharmaceut Assoc 45:260-267.
Sodium arsenite	41	36	27 - 52 (95% CL; slope = 7.6 [S.E. 2.7])	acceptable methods (e.g., Bliss, Litchfield and Wilcoxon, Weil, Thompson, etc.)	Sprague-Dawley rats	male	oral gavage	single dose	14 day observation; toxicity symptoms: diarrhea, diuresis, posture, respiratory effects, lethargy, abnormal gait; time to onset of signs < 1day; duration of signs 3 days; 9 rats dead (average per test)	3 dose levels (5 male each); 15 rats used; OECD TG401 (1981) followed for experimental procedures	NA	Vandenheuvel MJ, Clark DG, Fielder RJ, Koundakjian PP, Oliver GJA, Pelling D, Tomlinson NJ, Walker AP. 1990. Jul. The International Validation Of A Fixed-Dose Procedure As An Alternative To The Classical LD50 Test Food And Chemical Toxicology 28(7):469-482.
Sodium arsenite	41	41	31 - 53 (these limits are +/- 1.96 S.D.)	Thompson method; Weil tables	Carworth-Wistar rats; 90-120 g; 4-5 weeks	male	oral gastric intubation	in aqueous solution; concentration intubated = 10 mg/mL; dosages arranged in a logarithmic series differing by a factor of 2	LD50 based on mortalities during a 14 day period	non-fasted; groups of 5 rats; single oral dose toxicity	reagent grade	**RTECS REFERENCE** *Smyth HF Jr, Carpenter CP, Weil CS, Pozzani UC, Striegel JA, Nycum, JS. 1969. Range-finding toxicity data: List VII. Am Ind Hyg Assoc J 30: 470-476. Carnegie-Mellon University, Pittsburgh, PA (LD50 value)* ---------- *Smyth HF Jr, Carpenter CP, Weil CS, Pozzani UC, Striegel JA. 1962. Range-finding toxicity data: List VI. Am Ind Hyg Assoc J 23:95-107. Mellon Institute of Industrial Research, Pittsburg, PA (experimental parameters)*

CHEMICAL[1]	LD50[2] mg/kg oral rat RTECS 2002	LD50[3] mg/kg oral rat Primary Reference	LD50[4] mg/kg (range) Primary Reference	LD50 CALCULATION METHOD[5] Primary Reference	ANIMAL INFORMATION (stock, weight, age)	GENDER	ROUTE/ METHOD OF EXPOSURE[6]	DOSE	OBSERVATIONS	NOTES	CHEMICAL SOURCE	PRIMARY REFERENCE
Sodium arsenite	41	42	35 - 50 (95% CL)	Litchfield and Wilcoxon method	Holtsman rats; 300-500 g; 100-300 days (13 - 41 weeks)	male and female	oral, gelatin capsules	20, 50, 100, 200 (all in mg/kg)	death occurred within 4 days	approximately 40 rats used; 24 hour fasting before dosing; rats dosed under light anesthesia	Baker Analyzed Reagent with 0.02% impurities	Done AK, Peart AJ. 1971. Acute Toxicities of Arsenical Herbicides. Cinical Toxicology, 4(3):343-355. *University of Utah, Salt Lake City, UT*
Sodium arsenite	41	42	35 - 58 (95% CL)	acceptable methods (e.g., Bliss, Litchfield and Wilcoxon, Weil, Thompson, etc.)	Sprague-Dawley rats	male and female	oral gavage	single dose	14 day observation; toxicity symptoms: diarrhea, diuresis, posture, respiratory effects, lethargy, abnormal gait; time to onset of signs < 1 day; duration of signs 3 days; 9 rats dead (average per test)	3 dose levels (5 male each and 5 female); 30 rats used; OECD TG401 (1981) followed for experimental procedures	NA	Vandenheuvel MJ, Clark DG, Fielder RJ, Koundakjian PP, Oliver GJA, Pelling D, Tomlinson NJ, Walker AP. 1990. Jul. The International Validation Of A Fixed-Dose Procedure As An Alternative To The Classical LD50 Test Food And Chemical Toxicology 28(7):469-482.
Sodium arsenite	41	48	37 - 76 (95% CL)	acceptable methods (e.g., Bliss, Litchfield and Wilcoxon, Weil, Thompson, etc.)	Sprague-Dawley rats	female	oral gavage	single dose	14 day observation; toxicity symptoms: diarrhea, diuresis, posture, respiratory effects, lethargy, abnormal gait; time to onset of signs < 1 day; duration of signs 3 days; 9 rats dead (average per test)	3 dose levels (5 female each); 15 rats used; OECD TG401 (1981) followed for experimental procedures	NA	Vandenheuvel MJ, Clark DG, Fielder RJ, Koundakjian PP, Oliver GJA, Pelling D, Tomlinson NJ, Walker AP. 1990. Jul. The International Validation Of A Fixed-Dose Procedure As An Alternative To The Classical LD50 Test Food And Chemical Toxicology 28(7):469-482.
Sodium arsenite	41	53	39 - 74 (95% CL)	acceptable methods (e.g., Bliss, Litchfield and Wilcoxon, Weil, Thompson, etc.)	Sprague-Dawley rats; 190-300 g	female	oral gavage	single dose	14 day observation; toxicity symptoms: motor activity decrease, respiratory effects, blanching, piloerection, salivation, diarrhea; time to onset of signs < 1 day; duration of signs 3 days; animals fasted 16 -20 hours before administration	UDP Test	NA	Yam J, Reer PJ, Bruce RD. 1991. Comparison of the up-and-down method and the fixed-dose procedure for acute oral toxicity testing. Food Chem Toxicol 29(4):259-264. *The Procter and Gamble Co., Cincinnati, OH*
Sodium chloride	3000	3000	NA	NA	rats	NA	oral	NA	NA	No information/reference provided.	NA	**RTECS REFERENCE** *CODEN: TXAPA9 Bibliographic Data: Toxicology and Applied Pharmacology. (Academic Press, Inc., 1 E. First St., Duluth, MN 55802) V.1- 1959- CODEN Reference: 20,57,1971.* ---- Tucker RK, Haegel MA. 1971. Compararive acute oral toxicity of pesticides to six species of birds. Toxicology and Applied Pharmacology 20:57-65.
Sodium chloride	3000	3620	+/-300 (S.E.)	Croxton (1953) and Waugh (1952)	Wistar albino rats; female: 167+/-27 g; young adult	female	oral; intragastric tube	doses = 0, 0.8, 3, 3.2, 3.5, 3.8, 4, 5, 10, 16 g/kg in water; 20 mL/kg dose; 2 largest doses in larger volumes	convulsive movements, diarrhea, muscular rigidity, prostration, respiratory failure; death within 14 hours	fasted for 16 hours; 84 rats used; 12 - 44 rats per dose	NA	Boyd EM, Shanas MN. 1963. The acute oral toxicity of sodium chloride. Arch Internat Pharmacodyn 144:86-96. *Quebecs' University, Kingston, Ontario, Canada*
Sodium chloride	3000	3750	+/-430 (S.E.)	Croxton (1953) and Waugh (1952)	Wistar albino rats; male: 202+/-42 g; female: 167+/-27 g; young adult	male and female (equal numbers)	oral; intragastric tube	doses = 0, 0.8, 3, 3.2, 3.5, 3.8, 4, 5, 10, 16 g/kg in water; 20 mL/kg dose; 2 largest doses in larger volumes	convulsive movements, diarrhea, muscular rigidity, prostration, respiratory failure; death within 14 hours	fasted for 16 hours; 168 rats used; equal numbers of male and female; 12-44 rats per dose; this LD50 is determined from the data used to determine LD50 of 3620 mg/kg (female) and 3890 mg/kg (male) also reported in this reference [Boyd and Shanas 1963]	NA	Boyd EM, Shanas MN. 1963. The acute oral toxicity of sodium chloride. Arch Internat Pharmacodyn 144:86-96. *Quebecs' University, Kingston, Ontario, Canada*
Sodium chloride	3000	3890	+/-300 (S.E.)	Croxton (1953) and Waugh (1952)	Wistar albino rats; male: 202+/-42 g; young adult	male	oral; intragastric tube	doses = 0, 0.8, 3, 3.2, 3.5, 3.8, 4, 5, 10, 16 g/kg in water; 20 mL/kg dose; 2 largest doses in larger volumes	convulsive movements, diarrhea, muscular rigidity, prostration, respiratory failure; death within 14 hours	fasted for 16 hours; 84 rats used; 12 - 44 rats per dose	NA	Boyd EM, Shanas MN. 1963. The acute oral toxicity of sodium chloride. Arch Internat Pharmacodyn 144:86-96. *Quebecs' University, Kingston, Ontario, Canada*
Sodium chloride	3000	4200	3980 - 4430 (95% CL)	Litchfield and Wilcoxon method (1949)	rats	NA	oral	NA	NA	reference in Italian	NA	Scognamiglio WP, Amorico L, Gatti GL. 1972. Esperienze di tossicita e di tolleranza al monosioglutammato con un saggio di condizionamento di salvaguardia. Il Farmaco Edizone Pratica 27:19-27.
Sodium chloride	3000	6140	+/-310 (S.E.)	NA	CBL Wistar albino rats; 150-200 g	male	oral; intragastric tube	single dose; 5000 - 7500 mg/kg dose range; cmpd dissolved in distilled water; 20 mL/kg dosage	observed for 5 days; premortal diarrhea; convulsive movements	5 rats per dose; 30 rats used; rats not fasted	Merck Reagent	Boyd EM, Abel MM, Knight LM. 1966. The chronic oral toxicity of sodium chloride at the range of the LD50 (0.1L). Canad J Physiol Pharmacol 44:157-172. *Queen's University, Ontario, Canada*
Sodium dichromate (Sodium bichromate VI)	50	34.17	+/- 20.95 (S.D.)	Gad and Weil (1982) Probit analysis	Fischer 344 rats (Harlen Sprague Dawley)	female	oral gavage	single dose: 40,60,80 mg/kg; dosing solution: 10,5,1,0.5% (w/v); dosing vol: 0.4-8.0 mL/kg (40 mg/kg); 0.6-12 mL/kg (60 mg/kl); 0.8-16 mL/kg (80 mg/kg); doses in distilled water; 10% dose	observed first 6 hours then day 1, 7 and 14; hypoactivity, lacrimation, mydriasis, diarrhea, change in body weight; LD50 increased as the concentration of the dosing solution increased	animals acclimated for 2 weeks before dosing; animals fasted overnight; 5 animals used	member companies of the Industrial Health Foundation	Gad SC, Powers WJ, Dunn BJ, Hoffman GM, Siino KM, Walsh RD. 1986. Acute toxicity of four chromate salts. Proceedings of the Chromium Symposium, pp. 43-58. *G.D. Searle and Co., Skokie, IL*
Sodium dichromate (Sodium bichromate VI)	50	38.55	+/- 7.79 (S.D.)	Gad and Weil (1982) Probit analysis	Fischer 344 rats (Harlen Sprague Dawley)	female	oral gavage	single dose: 40,60,80 mg/kg; dosing solution: 10,5,1,0.5% (w/v); dosing vol: 0.4-8.0 mL/kg (40 mg/kg); 0.6-12 mL/kg (60 mg/kl); 0.8-16 mL/kg (80 mg/kg); doses in distilled water; 5% dose	observed first 6 hours then day 1, 7 and 14; hypoactivity, lacrimation, mydriasis, diarrhea, change in body weight; LD50 increased as the concentration of the dosing solution increased	animals acclimated for 2 weeks before dosing; animals fasted overnight; 5 animals/dose	member companies of the Industrial Health Foundation	Gad SC, Powers WJ, Dunn BJ, Hoffman GM, Siino KM, Walsh RD. 1986. Acute toxicity of four chromate salts. Proceedings of the Chromium Symposium, pp. 43-58. *G.D. Searle and Co., Skokie, IL*

CHEMICAL[1]	LD50[2] mg/kg oral rat RTECS 2002	LD50[3] mg/kg oral rat Primary Reference	LD50[4] mg/kg (range) Primary Reference	LD50 CALCULATION METHOD[5] Primary Reference	ANIMAL INFORMATION (stock, weight, age)	GENDER	ROUTE/ METHOD OF EXPOSURE[6]	DOSE	OBSERVATIONS	NOTES	CHEMICAL SOURCE	PRIMARY REFERENCE
Sodium dichromate (Sodium bichromate VI)	50	39.02	+/- 13.54 (S.D.)	Gad and Weil (1982) Probit analysis	Fischer 344 rats (Harlen Sprague Dawley)	female	oral gavage	single dose: 40, 50, 60, 80, 100 mg/kg; dosing solution 50% (w/v); 0.8-2.0 mL/kg dosing volume; doses in distilled water	observed first 6 hours then day 1, 7 and 14; hypoactivity, lacrimation, mydriasis, diarrhea, change in body weight; LD50 increased as the concentration of the dosing solution increased	animals acclimated for 2 weeks before dosing; animals fasted overnight; 5 male and 5 female rats per dose; 10 rats/dose; 5 female rats/dose for this value	member companies of the Industrial Health Foundation	Gad SC, Powers WJ, Dunn BJ, Hoffman GM, Siino KM, Walsh RD. 1986. Acute toxicity of four chromate salts. Proceedings of the Chromium Symposium, pp. 43-58. *G.D. Searle and Co., Skokie, IL*
Sodium dichromate (Sodium bichromate VI)	50	48.98	+/- 10.50 (S.D.)	Gad and Weil (1982) Probit analysis	Fischer 344 rats (Harlen Sprague Dawley)	male	oral gavage	single dose: 40,60,80 mg/kg; dosing solution: 10,5,1,0.5% (w/v); dosing vol: 0.4-8.0 mL/kg (40 mg/kg); 0.6-12 mL/kg (60 mg/kl); 0.8-16 mL/kg (80 mg/kg); doses in distilled water; 10% dose	observed first 6 hours then day 1, 7 and 14; hypoactivity, lacrimation, mydriasis, diarrhea, change in body weight; LD50 increased as the concentration of the dosing solution increased	animals acclimated for 2 weeks before dosing; animals fasted overnight; 5 animals/dose	member companies of the Industrial Health Foundation	Gad SC, Powers WJ, Dunn BJ, Hoffman GM, Siino KM, Walsh RD. 1986. Acute toxicity of four chromate salts. Proceedings of the Chromium Symposium, pp. 43-58. *G.D. Searle and Co., Skokie, IL*
Sodium dichromate (Sodium bichromate VI)	50	50	NA	NA	rats	NA	NA	NA	NA	reference in Russian	NA	**RTECS REFERENCE** *Gigiena Truda i Professional'nye Zabolevaniya. Labor Hygiene and Occupational Diseases. (V/O Mezhdunarodnaya Kniga, 113095 Moscow, USSR) V.1-36, 1957-1992. For publisher information, see MTPEEI.CODEN Reference:Vol 22 (8) 38, 1978.*
Sodium dichromate (Sodium bichromate VI)	50	51.1	+/- 5.93 (S.D.)	Gad and Weil (1982) Probit analysis	Fischer 344 rats (Harlen Sprague Dawley)	male and female	oral gavage	single dose: 40, 50, 60, 80, 100 mg/kg; dosing solution 50% (w/v); 0.8-20 mL/kg dosing volume; doses in distilled water	observed first 6 hours then day 1, 7 and 14; hypoactivity, lacrimation, mydriasis, diarrhea, change in body weight; LD50 increased as the concentration of the dosing solution increased	animals acclimated for 2 weeks before dosing; animals fasted overnight; 5 male and 5 female rats per dose; 10 rats/dose; this LD50 is determined from the data used to determine LD50 of 39.02 mg/kg (female) and 58.84 mg/kg (male) also reported in this reference [Gad et al. 1986]	member companies of the Industrial Health Foundation	Gad SC, Powers WJ, Dunn BJ, Hoffman GM, Siino KM, Walsh RD. 1986. Acute toxicity of four chromate salts. Proceedings of the Chromium Symposium, pp. 43-58. *G.D. Searle and Co., Skokie, IL*
Sodium dichromate (Sodium bichromate VI)	50	55.75	+/- 15.98 (S.D.)	Gad and Weil (1982) Probit analysis	Fischer 344 rats (Harlen Sprague Dawley)	male	oral gavage	single dose: 40,60,80 mg/kg; dosing solution: 10,5,1,0.5% (w/v); dosing vol: 0.4-8.0 mL/kg (40 mg/kg); 0.6-12 mL/kg (60 mg/kl); 0.8-16 mL/kg (80 mg/kg); doses in distilled water; 5% dose	observed first 6 hours then day 1, 7 and 14; hypoactivity, lacrimation, mydriasis, diarrhea, change in body weight; LD50 increased as the concentration of the dosing solution increased	animals acclimated for 2 weeks before dosing; animals fasted overnight; 5 animals/dose	member companies of the Industrial Health Foundation	Gad SC, Powers WJ, Dunn BJ, Hoffman GM, Siino KM, Walsh RD. 1986. Acute toxicity of four chromate salts. Proceedings of the Chromium Symposium, pp. 43-58. *G.D. Searle and Co., Skokie, IL*
Sodium dichromate (Sodium bichromate VI)	50	57.13	+/- 8.81 (S.D.)	Gad and Weil (1982) Probit analysis	Fischer 344 rats (Harlen Sprague Dawley)	female	oral gavage	single dose: 40,60,80 mg/kg; dosing solution: 10,5,1,0.5% (w/v); dosing vol: 0.4-8.0 mL/kg (40 mg/kg); 0.6-12 mL/kg (60 mg/kl); 0.8-16 mL/kg (80 mg/kg); doses in distilled water; 0.5% dose	observed first 6 hours then day 1, 7 and 14; hypoactivity, lacrimation, mydriasis, diarrhea, change in body weight; LD50 increased as the concentration of the dosing solution increased	animals acclimated for 2 weeks before dosing; animals fasted overnight; 5 animals/dose	member companies of the Industrial Health Foundation	Gad SC, Powers WJ, Dunn BJ, Hoffman GM, Siino KM, Walsh RD. 1986. Acute toxicity of four chromate salts. Proceedings of the Chromium Symposium, pp. 43-58. *G.D. Searle and Co., Skokie, IL*
Sodium dichromate (Sodium bichromate VI)	50	58.84	+/- 5.78 (S.D.)	Gad and Weil (1982) Probit analysis	Fischer 344 rats (Harlen Sprague Dawley)	male	oral gavage	single dose: 40, 50, 60, 80, 100 mg/kg; dosing solution 50% (w/v); 0.8-20 mL/kg dosing volume; doses in distilled water	observed first 6 hours then day 1, 7 and 14; hypoactivity, lacrimation, mydriasis, diarrhea, change in body weight; LD50 increased as the concentration of the dosing solution increased	animals acclimated for 2 weeks before dosing; animals fasted overnight; 5 male and 5 female rats per dose; 10 rats/dose; 5 male rats/dose for this value	member companies of the Industrial Health Foundation	Gad SC, Powers WJ, Dunn BJ, Hoffman GM, Siino KM, Walsh RD. 1986. Acute toxicity of four chromate salts. Proceedings of the Chromium Symposium, pp. 43-58. *G.D. Searle and Co., Skokie, IL*
Sodium dichromate (Sodium bichromate VI)	50	59.84	+/- 7.74 (S.D.)	Gad and Weil (1982) Probit analysis	Fischer 344 rats (Harlen Sprague Dawley)	male	oral gavage	single dose: 40,60,80 mg/kg; dosing solution: 10,5,1,0.5% (w/v); dosing vol: 0.4-8.0 mL/kg (40 mg/kg); 0.6-12 mL/kg (60 mg/kl); 0.8-16 mL/kg (80 mg/kg); doses in distilled water; 0.5% dose	observed first 6 hours then day 1, 7 and 14; hypoactivity, lacrimation, mydriasis, diarrhea, change in body weight; LD50 increased as the concentration of the dosing solution increased	animals acclimated for 2 weeks before dosing; animals fasted overnight; 5 animals/dose	member companies of the Industrial Health Foundation	Gad SC, Powers WJ, Dunn BJ, Hoffman GM, Siino KM, Walsh RD. 1986. Acute toxicity of four chromate salts. Proceedings of the Chromium Symposium, pp. 43-58. *G.D. Searle and Co., Skokie, IL*
Sodium dichromate (Sodium bichromate VI)	50	59.84	+/- 7.74 (S.D.)	Gad and Weil (1982) Probit analysis	Fischer 344 rats (Harlen Sprague Dawley)	male	oral gavage	single dose: 40,60,80 mg/kg; dosing solution: 10,5,1,0.5% (w/v); dosing vol: 0.4-8.0 mL/kg (40 mg/kg); 0.6-12 mL/kg (60 mg/kl); 0.8-16 mL/kg (80 mg/kg); doses in distilled water; 1% dose	observed first 6 hours then day 1, 7 and 14; hypoactivity, lacrimation, mydriasis, diarrhea, change in body weight; LD50 increased as the concentration of the dosing solution increased	animals acclimated for 2 weeks before dosing; animals fasted overnight; 5 animals/dose	member companies of the Industrial Health Foundation	Gad SC, Powers WJ, Dunn BJ, Hoffman GM, Siino KM, Walsh RD. 1986. Acute toxicity of four chromate salts. Proceedings of the Chromium Symposium, pp. 43-58. *G.D. Searle and Co., Skokie, IL*

CHEMICAL[1]	LD50[2] mg/kg oral rat RTECS 2002	LD50[3] mg/kg oral rat Primary Reference	LD50[4] mg/kg (range) Primary Reference	LD50 CALCULATION METHOD[5] Primary Reference	ANIMAL INFORMATION (stock, weight, age)	GENDER	ROUTE/ METHOD OF EXPOSURE[6]	DOSE	OBSERVATIONS	NOTES	CHEMICAL SOURCE	PRIMARY REFERENCE
Sodium Dichromate (Sodium Bichromate VI)	50	64.5	+/- 10.18 (S.D.)	Gad and Weil (1982) Probit analysis	Fischer 344 rats (Harlen Sprague Dawley)	female	oral gavage	single dose: 40,60,80 mg/kg; dosing solution: 10,5,1,0.5% (w/v); dosing vol: 0.4-8.0 mL/kg (40 mg/kg); 0.6-12 mL/kg (60 mg/kl); 0.8-16 mL/kg (80 mg/kg); doses in distilled water; 1% dose	observed first 6 hours then day 1, 7 and 14; hypoactivity, lacrimation, mydriasis, diarrhea, change in body weight; LD50 increased as the concentration of the dosing solution increased	animals acclimated for 2 weeks before dosing; animals fasted overnight; 5 animals/dose	member companies of the Industrial Health Foundation	Gad SC, Powers WJ, Dunn BJ, Hoffman GM, Siino KM, Walsh RD. 1986. Acute toxicity of four chromate salts. Proceedings of the Chromium Symposium, pp. 43-58. *G.D. Searle and Co., Skokie, IL*
Sodium hypochlorite	8910 (from HSDB); no rat oral data from RTECS	8200	NA	NA	NA	NA	NA	NA	NA	12.5% hypochlorite solution	NA	Sodium Hypochlorite Toxicity Profile. 1990. British Industrial Biological Research Association (BIBRA).
Sodium hypochlorite	8910 (from HSDB); no rat oral data from RTECS	9360 - 11700	NA	NA	NA	NA	NA	NA	NA	12.5% hypochlorite solution	NA	Colgate-Palmolive. 1990. Internal Report: Investigation of the properties of the wash water in connection with washing using "Klorin" bleach. Unpublished.
Sodium hypochlorite	8910 (from HSDB); no rat oral data from RTECS	>11800	NA	NA	NA	NA	NA	NA	NA	3.6% hypochlorite solution	NA	Colgate-Palmolive. 1990. Internal Report: Investigation of the properties of the wash water in connection with washing using "Klorin" bleach. Unpublished.
Sodium hypochlorite	8910 (from HSDB); no rat oral data from RTECS	13000	NA	NA	NA	NA	NA	NA	NA	5.25% hypochlorite solution	NA	MSDS Chlorine Institute 1982
Sodium I fluoride	115	64 (29 mg F/kg; converted to mg NaF/kg)	60 - 69 (95% CI)	Litchfield and Wilcoxon method (1949); Bliss (1938)	rats; mean bw = 169 g; 3 months	female	oral	5 mL/kg	22 rats died within 3 hour; 15 rats died after 3 hour; observed for 7 days; signs of toxicity appeared from 5-15 minutes after administration of NaF: muscle weakness, salivation, diarrhea, lacrimation, tremor, convulsion, hypopnea, cynosis, urinary incontinence; most animals died within 24 hour after dosing	reference paprer in Japanese; English summary and table/graph headers; see paper for information about regression coefficient of log dose-NED mortality curve	NA	Sakama H. 1980. Toxicological studies of fluorine compounds. I. Acute toxicity of sodium fluoride to rats and mice in relation to age, sex, animal genus, and administration route. Shika Gakuho. Journal of Dentistry. 80: 1519. *Tokyo Dental College, Japan.*
Sodium I fluoride	115	69 (31 mg F/kg; converted to mg NaF/kg)	55 - 84 (CL)	Litchfield and Wilcoxon method (1949)	Sprague-Dawley rats; mean bw and ranges 250 g (200-359 g); 90 days	female	stomach tube	NaF in aqueous solution (0.2 - 1.6 mL/dose)	mortality confined to 24 hour; when doses equal to or greater than the LD50 were administered, half of the 250 g rats died within 3 hours	fasted 24 hour before dosing; at least seven dose levels used for each population; groups of 8 -15 rats	NA	DeLopez OH, Smith FA, Hodge HC. 1976. Plasma fluoride concentrations in rats acutely poisoned with sodium fluoride. Toxicol Appl Pharmacol 37:75-83. *Univ. of Rochester School of Med. And Dent., Rochester, NY*
Sodium I fluoride	115	73 (33 mg F/kg; converted to mg NaF/kg)	66 - 80 (95% CI)	Litchfield and Wilcoxon method (1949); Bliss (1938)	rats; mean bw = 295 g; 3 months	male	oral	3 mL/kg	6 rats died within 3 hour; 35 rats died after 3 hour; observed for 7 days; signs of toxicity appeared from 5-15 minutes after administration of NaF: muscle weakness, salivation, diarrhea, lacrimation, tremor, convulsion, hypopnea, cynosis, urinary incontinence; most animals died within 24 hour after dosing	reference paprer in Japanese; English summary and table/graph headers; see paper for information about regression coefficient of log dose-NED mortality curve	NA	Sakama H. 1980. Toxicological studies of fluorine compounds. I. Acute toxicity of sodium fluoride to rats and mice in relation to age, sex, animal genus, and administration route. Shika Gakuho. Journal of Dentistry. 80: 1519. *Tokyo Dental College, Japan.*
Sodium I fluoride	115	80	+/- 5 (S.E.)	Winthrop logarithmic probit graph paper; Miller and Tainter (1944)	Albino rats; 200-300 g	NA	oral; stomach tube	single dose; 25% solution; 22 - 288 mg/kg doses;	percentage mortality observed in 24 hour calculated, then LD50 determined	98 rats used	NA	Shourie KL, Hein JW, Hodge HC. 1950. Preliminary studies of the caries inhibiting potential and acute toxicity of sodium monofluorophosphate. J Dent Res 29:529-533. *Univeristy of Rochester, School of Medicine and Denistry, Rochester, NY.*
Sodium I fluoride	115	84 (38 mg F/kg; converted to mg NaF/kg)	77 - 93 (95% CI)	Litchfield and Wilcoxon method (1949); Bliss (1938)	rats; mean bw = 60 g; 3 weeks	female	oral	5 mL/kg	16 rats died within 3 hour; 32 rats died after 3 hour; observed for 7 days; signs of toxicity appeared from 5-15 minutes after administration of NaF: muscle weakness, salivation, diarrhea, lacrimation, tremor, convulsion, hypopnea, cynosis, urinary incontinence; most animals died within 24 hour after dosing	reference paprer in Japanese; English summary and table/graph headers; see paper for information about regression coefficient of log dose-NED mortality curve.	NA	Sakama H. 1980. Toxicological studies of fluorine compounds. I. Acute toxicity of sodium fluoride to rats and mice in relation to age, sex, animal genus, and administration route. Shika Gakuho. Journal of Dentistry. 80: 1519. *Tokyo Dental College, Japan.*

CHEMICAL[1]	LD50[2] mg/kg oral rat RTECS 2002	LD50[3] mg/kg oral rat Primary Reference	LD50[4] mg/kg (range) Primary Reference	LD50 CALCULATION METHOD[5] Primary Reference	ANIMAL INFORMATION (stock, weight, age)	GENDER	ROUTE/ METHOD OF EXPOSURE[6]	DOSE	OBSERVATIONS	NOTES	CHEMICAL SOURCE	PRIMARY REFERENCE
Sodium I fluoride	115	107 (46 mg F/kg; converted to mg NaF/kg)	95 - 110 (95% CI)	Litchfield and Wilcoxon method (1949); Bliss (1938)	rats; mean bw = 58 g; 3 weeks	male	oral	5 mL/kg	2 rats died within 3 hour; 32 rats died after 3 hour; observed for 7 days; signs of toxicity appeared from 5-15 minutes after administration of NaF: muscle weakness, salivation, diarrhea, lacrimation, tremor convulsion, hypopnea, cynosis, urinary incontinence; most animals died within 24 hour after dosing	reference paprer in Japanese; English summary and table/graph headers; see paper for information about regression coefficient of log dose-NED mortality curve.	NA	Sakama H. 1980. Toxicological studies of fluorine compounds. I. Acute toxicity of sodium fluoride to rats and mice in relation to age, sex, animal genus, and administration route. Shika Gakuho. Journal of Dentistry. 80: 1519. *Tokyo Dental College, Japan.*
Sodium I fluoride	115	115 (52 mg F/kg; converted to mg NaF/kg)	106 - 126 (slope = 1.23 [1.06 - 1.43]; 95% CL)	Litchfield and Wilcoxin method (1949)	Sprague-Dawley rats; mean bw and ranges 150 g (112-184 g); 30-45 days	female	stomach tube	NaF in aqueous solution (0.2 - 1.6 mL/dose); 30 - 100 mg F/kg doses;	mortality confined to 24 hour; when doses ≥ the LD50 were administered, one-third of the 150 g rats died within 7 hours; dose in mg F/kg and 24 hour mortality: 75-2/2 dead; 70-9/10 dead; 65-7/9 dead; 62-6/8 dead; 58-4/10 dead; 55-9/15 dead; 50-8/12 dead; 45-3/10 dead; 42-2/10 dead; 40-0/2 dead; 35-0/2 dead; salivation, diarrhea, thirst, lethargy	fasted 24 hour before dosing; 11 dose levels used; groups of 2 -15 rats; 90 rats used; 50 dead; detailed information from RTECS reference (master thesis for de Lopez 1970)	NA	DeLopez OH, Smith FA, Hodge HC. 1976. Plasma fluoride concentrations in rats acutely poisoned with sodium fluoride. Toxicol Appl Pharmacol 37:75-83. *Univ. of Rochester School of Med. And Dent., Rochester, NY*
Sodium I fluoride	115	115 (52 mg F/kg; converted to mg NaF/kg)	108 - 119 (slope = 1.28 [1.0 - 1.6]; 95% CL)	Litchfield and Wilcoxon method (1949)	Sprague-Dawley rats; mean bw and ranges 80 g (50-108 g); 30-45 days	female	stomach tube	NaF in aqueous solution (0.2 - 1.6 mL/dose); 30 - 100 mg F/kg doses;	mortality confined to 24 hour; when doses equal to or greater than the LD50 were administered, half of the 80 g rats died within 6 hours; dose in mg F/kg and 24 hour mortality: 100-9/12 dead; 75-8/9 dead; 70-8/10 dead; 60-8/10 dead; 50-2/10 dead; 40-2/10 dead; 30-0/2 dead; salivation, diarrhea, thirst, lethargy	fasted 24 hour before dosing; at least seven dose levels used for each population; groups of 2 -12 rats; 63 rats used; 36 dead; detailed information from RTECS reference (master thesis for de Lopez 1970)	NA	**RTECS REFERENCE** *CODEN: NTIS** Bibliographic Data: National Technical Information Service. (Springfield, VA 22161) Formerly U.S. Clearinghouse for Scientific & Technical Information. CODEN Reference: UR-3490-95.*---- DeLopez OH. 1970. Acute fluoride toxicity: plasma fluoride concentrations following acute oral doses of sodium fluoride in the rat. Master of Science thesis. *Univ. of Rochester School of Med. And Dent., Rochester, NY (see de Lopez 1976)*
Sodium I fluoride	115	119 (54 mg F/kg; converted to mg NaF/kg)	108 - 119 (slope = 1.28 [1.0 - 1.6]; 95% CL)	Litchfield and Wilcoxon method (1949)	Sprague-Dawley rats; mean bw and ranges 80 g (50-108 g); 30-45 days	female	stomach tube	NaF in aqueous solution (0.2 - 1.6 mL/dose); 30 - 100 mg F/kg doses	mortality confined to 24 hour; when doses equal to or greater than the LD50 were administered, half of the 80 g rats died within 6 hours; dose in mg F/kg and 24 hour mortality: 100-9/12 dead; 75-8/9 dead; 70-8/10 dead; 60-8/10 dead; 50-2/10 dead; 40-2/10 dead; 30-0/2 dead; salivation, diarrhea, thirst, lethargy	fasted 24 hour before dosing; at least seven dose levels used for each population; groups of 2 -12 rats; 63 rats used; 36 dead; detailed information from RTECS reference (master thesis for de Lopez 1970)	NA	DeLopez OH, Smith FA, Hodge HC. 1976. Plasma fluoride concentrations in rats acutely poisoned with sodium fluoride. Toxicol Appl Pharmacol 37:75-83. *Univ. of Rochester School of Med. And Dent., Rochester, NY*
Sodium I fluoride	115	180	120 - 260 (these limits are +/- 1.96 S.D.)	Thompson method; Weil tables	Carworth-Wistar rats; 90-120 g; 4-5 weeks	male	oral gastric intubation	in aqueous solution; concentration intubated = 5 mg/mL; dosages arranged in a logarithmic series differing by a factor of 2	LD50 based on mortalities during a 14 day period	non-fasted; groups of 5 rats; single oral dose toxicity	reagent grade	Smyth HF Jr, Carpenter CP, Weil CS, Pozzani UC, Striegel JA, Nycum, JS. 1969. Range-finding toxicity data: List VII. Am Ind Hyg Assoc J 30: 470-476. *Carnegie-Mellon University, Pittsburgh, PA* (LD50 value) ---------- Smyth HF Jr, Carpenter CP, Weil CS, Pozzani UC, Striegel JA. 1962. Range-finding toxicity data: List VI. Am Ind Hyg Assoc J 23:95-107. *Mellon Institute of Industrial Research, Pittsburg, PA* (experimental parameters)
Sodium I fluoride	115	189 (85.5 mg F/kg; converted to mg NaF/kg)	#2: 170 -209 (95%CI)	Litchfield and Wilcoxon method (1949)	Sprague-Dawley rats; 152-202 g	male	oral; intragastric	50 to 220 mg F/kg (111 - 486 mg NaF/kg) in water	number of deaths determined at 1, 2, 4, 8, 24 hour and daily thereafter; 20 rats dead at 24 hour; 26 rats dead at 14 days; monitored for 2 weeks but no deaths after 4 days; deaths/dose (mg/kg): 111-0/10, 122-0/10, 134-1/10, 147-0/10, 162-0/10, 166-4/10, 183 4/10, 201-3/10, 221-6/10, 243-8/10	fasted 18 hour before dosing; 10 day acclimatization before dosing; 8 rats in each dosage group; 80 rats used	>99.5% purity	Whitford GM, Birdsong-Whitford NL, et al. 1990. Acute oral toxicity of sodium fluoride and monofluorophosphate separately or in combination in rats. Caries Res 24(2):121-126. *Medical College of Georgia, Augusta, GA; Dept. of Odonto-Stomatologie, Laboratoires Goupil SA, Cachan, France.*
Sodium I fluoride	115	200	NA	NA	rats	NA	oral; stomach tube	NA	abdominal distress, diarrhea, cyanosis, dyspnea, fibrillation of skeletal muscles; onset within 6 hours	information from the laboratories of Division of Pharmacology, U.S. FDA.; fasted animals	NA	Lehman AJ. 1951. Chemicals in Foods: a report to the association of food and drug officials on current developments. Part II. Pesticides. Quarterly Bulletine (Association of Food and Drug Officials of the United States). Vol.15:122-133. *U.S. FDA*
Sodium I fluoride	115	223	NA	Probit analysis	Sprague-Dawley rats; 190-315 g	male	oral gavage	0.101 - 0.500 g NaF/kg bw	animals observed for mortality frequently during first 4 hour after dosing; observed daily thereafter for 14 days	fasted 18 - 20 hour before dosing; 8 rats per group; 48 total rats used; mortality confined to 24 hour after dosing except 3 animals died on day 2, 3, and 5	J.T. Baker Chemical Co.	Skare JA, Schrotei KR, Nixon GA. 1986. Lack of DNA-strand breaks in rat testicular cells after in vivo treatment with sodium fluoride. Mutat Res 170:85-92. *The Proctor and Gamble Company, Cincinnati, OH*
Sodium I fluoride	115	279 (126.3 mg F/kg; converted to mg NaF/kg)	#1: 218 - 358 (95%CI)	Litchfield and Wilcoxon method (1949)	Sprague-Dawley rats; 152-202 g	male	oral; intragastric	50 to 220 mg F/kg (111 - 486 mg NaF/kg) in water	number of deaths determined at 1, 2, 4, 8, 24 hour after dose and each day thereafter; 32% rats dead during 1st day; 23 rats dead at 14 days; monitored for 2 weeks but no deaths after 4 days; deaths/dose (mg/kg): 160- 1/10, 207- 4/10, 254-5/10, 330-6/10, 428-7/10	fasted 18 hour before dosing; 10 day acclimatization before dosing; 10 rats in each dosage group; 50 rats used	>99.5% purity	Whitford GM, Birdsong-Whitford NL, et al. 1990. Acute oral toxicity of sodium fluoride and monofluorophosphate separately or in combination in rats. Caries Res 24(2):121-126. *Medical College of Georgia, Augusta, GA; Dept. of Odonto-Stomatologie, Laboratoires Goupil SA, Cachan, France.*
Sodium oxalate	11160	11160	NA	NA	rat	NA	oral	NA	NA	Value derived from 7500 mg'kg from RTECS for oxalic acid, which is a typo. Original reference (Vernot et al 1977) has 7.5 ml/kg)	NA	**RTECS REFERENCE** *CODEN: EVHPAZ Bibliographic Data: EHP, Environmental Health Perspectives. (U.S. Government Printing Office, Supt of Documents, Washington, DC 20402) No.1-1972- CODEN Reference: 106(Suppl).*

CHEMICAL[1]	LD50[2] mg/kg oral rat RTECS 2002	LD50[3] mg/kg oral rat Primary Reference	LD50[4] mg/kg (range) Primary Reference	LD50 CALCULATION METHOD[5] Primary Reference	ANIMAL INFORMATION (stock, weight, age)	GENDER	ROUTE/ METHOD OF EXPOSURE[6]	DOSE	OBSERVATIONS	NOTES	CHEMICAL SOURCE	PRIMARY REFERENCE
Sodium oxalate	11160	558.13 (converted from 7.5 mL/kg 5% oxalic acid)	372 - 819	moving average (Thompson & Weil)	Sprague-Dawley; 200-300 g	female	oral gastric intubation	5% aqueous solution; doses arranged in a logarithmic series differing by a factor of 2 (assumed from Smyth et al. 1962)	LD50 based on mortalities during a 14 day period (assumed from Smyth et al. 1962)	non-fasted; groups of 5 rats; single oral dose toxicity (assumed from Smyth et al 1962); reported as 7.5 ml/kg of 5% oxalic acid	NA	Vernot EH, MacEwen JD, Haun CC, Kinkead ER. 1977. Acute toxicity and skin corrosion data for some organic and inorganic compounds and aqueous solutions. Toxicology and Applied Pharmacology 42:417-423. *(Indicates methods of Smyth et al. 1962 were used.)*
Sodium oxalate	11160	706.96 (converted from 9.5 mL/kg 5% oxalic acid)	402 - 915	moving average (Thompson & Weil)	Sprague-Dawley; 200-300 g	male	oral gastric intubation	5% aqueous solution; doses arranged in a logarithmic series differing by a factor of 2 (assumed from Smyth et al. 1962)	LD50 based on mortalities during a 14 day period (assumed from Smyth et al. 1962)	non-fasted; groups of 5 rats; single oral dose toxicity (assumed from Smyth et al 1962); reported as 9.5 ml/kg of 5% oxalic acid	NA	Vernot EH, MacEwen JD, Haun CC, Kinkead ER. 1977. Acute toxicity and skin corrosion data for some organic and inorganic compounds and aqueous solutions. Toxicology and Applied Pharmacology 42:417-423. *(Indicates methods of Smyth et al. 1962 were used.)*
Sodium selenate	1.6	1.6	NA	NA	rats	NA	oral	NA	NA	reference in Russian	NA	**RTECS REFERENCE** *CODEN: GISAAA Bibliographic Data: Gigiena i Sanitariya. For English translation, see HYSAAV. (V/O Mezhdunarodnaya Kniga, 113095Moscow, USSR) V.1- 1936- CODEN Reference: 49(9),66,1984.* ---- Novikov JV, Plitman SE, et al. 1984. Selenium in water and its effect on the human body. Gigiena i Sanitariya 49(9):66-68.
Sodium selenate	1.6	5.98	NA	NA	rats	NA	oral; stomach tube	NA	violent gastroenteritis, diarrhea, rice water stools,garlic breath, nervousness, CNS depression; onset within 15 minutes	information from the laboratories of Division of Pharmacology, U.S. FDA.; fasted animals	NA	Lehman AJ. 1951. Chemicals in Foods: a report to the association of food and drug officials on current developments. Part II. Pesticides. Quarterly Bulletine (Association of Food and Drug Officials of the United States). Vol.15:122-133. *U.S. FDA*
Strychnine	2.35	2.35	NA	mortality curves	adult white rats	female	oral, stomach tube; single dose	2.25 - 15 mg/kg dose; single dose; cmpd mixed in gum acacia and water; 1 mg/mL dose solution	15, 10, 7.5, 6, 5mg/kg dose killed 90 rats (100% mortality); 4 mg/kg, 17/18 rats dead (95%); 3 mg/kg, 20/27 rats dead (74%); 2.5 mg/kg 19/27 rats dead (70%); 2.25 mg/kg, 7/18 rats dead (39%); 7.3 - 14.1 minutes average time to death	180 rats used	U.S.P IX Strychnine alkaloid	**RTECS REFERENCE** *CODEN: JAPMA8 Bibliographic Data: Journal of the American Pharmaceutical Association, Scientific Edition. (Washington, DC) V.29-49, 1940-60. For publisher information, see JPMSAE. CODEN Reference: 31,113,1942.* ---- Ward JC, Crabtree DG. 1942. Strychnine X. Comparative accuracies of stomach tube and intraperitoneal injection methods of bioassay. Journal of the American Pharmaceutical Association, Scientific Edition 31:113-115. *U.S. Fish and Wildlife Service, Denver, CO*
Strychnine	2.35	6.5	NA	mortality curves	adult white rats	male	oral, stomach tube; single dose	5 - 15 mg/kg dose; single dose; cmpd mixed in gum acacia and water; 1 mg/mL dose solution	15 mg/kg, 16/18 rats dead (89% mortality); 10 mg/kg, 15/18 rats dead (83%); 7.5 mg/kg, 16/18 rats dead (89%); 6 mg/kg 6/18 rats dead (33%); 5 mg/kg, 4/18 rats dead (39%); 10.8 - 19.5 minutes average time to death	90 rats used	U.S.P IX Strychnine alkaloid	Ward JC, CrabtreeDG. 1942. Strychnine X. Comparative accuracies of stomach tube and intraperitoneal injection methods of bioassay. Journal of the American Pharmaceutical Association, Scientific Edition 31:113-115. *U.S. Fish and Wildlife Service, Denver, CO*
Strychnine	2.35	16.2	NA	NA	rats	NA	oral, stomach tube; single dose	NA	tonic convulsions; deaths from medullary paralysis and exhaustion and usually occur within a 12 hour period	NA	NA	Lehman AJ. 1951. Chemicals in Foods: a report to the association of food and drug officials on current developments. Part II. Pesticides. Quarterly Bulletine (Association of Food and Drug Officials of the United States). Vol.15:122-133. *U.S. FDA*
Strychnine	2.35	25	NA	statistical formula based on mortality rates	wild Norway rats	NA	oral, stomach tube; single dose	a number of individual doses of a cmpd, each dose at a different concentration level, are given to an equal number of test animals	convulsions	NA	NA	Peardon DL, Kilbourn E, et al. 1972. New selective rodenticides. Soap Cosmet Chem Spec 48(12):6. *Rohm and Haas Company, Philadelphia, PA*
Thallium I sulfate	16	15.8	+/- 0.9 (S.E.)	Litchfield and Fetig (1941)	wild Norway rats (trapped in Baltimore, MD); 134-579 g (ave = 298 g), adult	male and female	oral gavage	chemical suspended in 10% acacia solution; received appropriate doses in 1 mL per 100 g bw	rats survived from 6 - 72 hours	37 rats used (approx. equal number of male/female); overnight fasting before dosing; assays performed in winter, repeated in summer; LD50 values from combined information; final LD50 was higher than winter LD50; attributed to not having enough rats in winter.	GIBCO brand; 99.0% pure	Dieke SH, Richter CP. 1946. Comparative assays of rodenticides on wild Norway rats. I. Toxicity. Publ Health Rep 61:672-679. *Johns Hopkins Hospital, Baltimore, MD*
Thallium I sulfate	16	16	NA	NA	rats	NA	oral	NA	NA	reference is a review article in Japanese; this LD50 value assumed to be from Peardon et al. 1972.	NA	**RTECS REFERENCE** *CODEN: YAKUD5 Bibliographic Data: Gekkan Yakuji. Pharmaceuticals Monthly. (Yakugyo Jihosha, Inaoka Bldg., 2-36 Jinbo-cho, Kanda, Chiyoda-ku, Tokyo 101, Japan) V.1- 1959- CODEN Reference: 22,291,1980.*
Thallium I sulfate	16	16	NA	statistical formula based on mortality rates	wild Norway rats	NA	oral, stomach tube; single dose	a number of individual doses of a cmpd; each dose at a different conc level given to equal number of test animals	respiratory failure	NA	NA	Peardon DL, Kilbourn E, et al. 1972. New selective rodenticides. Soap Cosmet Chem Spec 48(12):6. *Rohm and Haas Company, Philadelphia, PA*
Thallium I sulfate	16	25	NA	NA	rats	NA	oral, stomach tube; single dose	NA	72 hour observation; most rats dead within this period	fasted animals	NA	Lehman AJ. 1951. Chemicals in Foods: a report to the association of food and drug officials on current developments. Part II. Pesticides. Quarterly Bulletine (Association of Food and Drug Officials of the United States). Vol.15:122-133. *U.S. FDA*
Trichloroacetic acid	no rat oral data from RTECS	400	NA	NA	rats	NA	oral	NA	NA	(source of information not provided)	NA	Worthing CR, Walker SB, eds. 1987. Pesticide Manual. 8th edition. 765-766.

CHEMICAL[1]	LD50[2] mg/kg oral rat RTECS 2002	LD50[3] mg/kg oral rat Primary Reference	LD50[4] mg/kg (range) Primary Reference	LD50 CALCULATION METHOD[5] Primary Reference	ANIMAL INFORMATION (stock, weight, age)	GENDER	ROUTE/ METHOD OF EXPOSURE[6]	DOSE	OBSERVATIONS	NOTES	CHEMICAL SOURCE	PRIMARY REFERENCE
Trichloroacetic acid	no rat oral data from RTECS	3320	3160 - 3480 (95% certainty; slope = 20.97)	Bliss	rats (raised in the laboratory); 150-250 g; 70-100 days	male and female (mostly male)	oral intubation	single dose; acid adjusted with sodium hydroxide to pH range of 6 -7; 10 mL/kg dose volume	observed for 6 days; passed into narcosis to seminarcosis and died or recovered within 36 hours; dose in g/kg versus mortality: 2.594 - 0/5; 3.000 - 3/10; 3.153 - 1/5; 3.400 - 5/10; 3.800 - 9/10;3991 - 5/5; 4.200 - 10/10; 4.600 10/10	fasted 18 hours before dosing; 65 rats used; 43 of 65 dead	NA	Woodard G, Lange SW, Nelson KW, Calvery HO. 1941. The acute oral toxicity of acetic, chloroacetic, dichloroacetic, and trichloroacetic acids. J Ind Hyg Toxicol 23(2):78-82.
Trichloroacetic acid	no rat oral data from RTECS	5000			rats	male	oral	NA	NA	NA	NA	Farm Chemicals Handbook. 1992. Meister Pub., 37841 Euclid Ave., Willoughy, OH. p. C326.
Trichloroacetic acid	no rat oral data from RTECS	5060			rats	female	oral	NA	NA	NA	NA	Farm Chemicals Handbook. 1992. Meister Pub., 37841 Euclid Ave., Willoughy, OH. p. C326.
Trichloroacetic acid	no rat oral data from RTECS	8900	7000 - 9900	NA	rats; 220 +/- 40 g	NA	oral; intragastric	NA	NA	(source of information not provided)	NA	Izmerov NF, Sanotsky IV, Sidorov KK. 1982. Toxicometric Parameters of Industrial Toxic Chemicals under Single Exposure. International Register of Potentially Toxic Chemicals (IRPTC). United Nations Environment Programme (UNEP). Centre of International Projects, GKNT. Moscow, Russia.
Triethylenemelamine	13	1	NA	NA	rats	NA	oral	NA	NA	Reference offers neither experimental details nor the primary reference for LD50. Value reported as "ca. 1"	NA	Hayes WJ Jr. 1964. The toxicology of chemosterilants. Bulletin of the World Health Organization. 31:721-736. *(RC's reference from 1983/84 RTECS.)*
Triethylenemelamine	13	4	NA	Probit method	Sprague-Dawley rats; 190-200 g	female	oral	geometric progression of 14 for dosing; in water or neat	20 rats used; 11 dead; observed for 14 days	non-fasted; 4 groups of 5 female; 20 rats used	Polysciences, Inc. Warrington, PA	Thompson ED, Gibson DP. 1984. A method for determining the maximum tolerated dose for acute in vivo cytogenetic studies. Food Chem Toxicol 22(8):665-76. *The Procter and Gamble Co., Cincinnati, OH*
Triethylenemelamine	13	6.9	NA	Probit method	Sprague-Dawley rats; 190-200 g	male	oral	geometric progression of 14 for dosing; in water or neat	20 rats used; 9 dead; observed for 14 days	non-fasted; 4 groups of 5 male; 20 rats used	Polysciences, Inc. Warrington, PA	Thompson ED, Gibson DP. 1984. A method for determining the maximum tolerated dose for acute in vivo cytogenetic studies. Food Chem Toxicol 22(8):665-76. *The Procter and Gamble Co., Cincinnati, OH*
Triethylenemelamine	13	13	8 - 20 (95% CL; slope = 2.1)	Litchfield and Wilcoxin (1949)	Wistar rats; 150-350 g	male and female	oral; stomach tube	dissolved in isotonic saline within 30 minutes of dosing; less than 5% weight of insoluble matter filtered out; highest dose 500 mg/kg	14 observation period; absence of acute toxicity signs	information not grouped according to sex since differences not evident; 6 rats per dose; animals fasted overnight	NA	**RTECS REFERENCE** *CODEN: JPETAB Bibliographic Data: Journal of Pharmacology and Experimental Therapeutics. (Williams & Wilkins Co., 428 E. Preston St., Baltimore, MD 21202) V.1- 1909/10- CODEN Reference: 100,398,1950.*---- Philips FS, Thiersch JB. 1950. The nitrogen mustard-like actions of 2,4,6-tris(ethylenimino)-s-triazine and other bis(ethylenimines). Journal of Pharmacology and Experimental Therapeutics 100:398-407. *Sloan Kettering Institute for Cancer Research, New York, NY*
Triphenyltin hydroxide	46	46.4	NA	NA	Fischer rats; 6 weeks	male and female	oral intubation	single dose followed by daily doses up to 14 days	observed up to 14 days	NA	NA	**RTECS REFERENCE** *CODEN: NCILB* Bibliographic Data: Progress Report for Contract No. NIH-NCI-E-C-72-3252, Submitted to the National Cancer Institute by Litton Bionetics, Inc. (Bethesda, MD) CODEN Reference: NCI-E-C-72-3252,1973.*---- Carcinogenesis bioassay of environmental chemicals annual progress report NIH-NCI-E-C-72-3252. 5/13/71 -- 8/6/73 and Final report NIH-NCI-E-71-2146. Submitted to The National Cancer Institute, National Institutes of Health, Bethesda, MD. 8/15/73 (revised 8/10/73). FM Garner (princ. investigat.), Litton Bionetics, Inc., Bethesda, MD
Triphenyltin hydroxide	46	156	115 - 208 (CL)	NA	rats	female	oral	single dose; 80, 160, 315, or 630 mg/kg doses	observed for 19 days; toxicity develops slowly; toxic signs 2 days after dose; deaths 5 - 9 days after initial dose; dose (mg/kg), number dead: 80 - 1/10; 160 - 4/10; 315 - 10/10; 630 - 10/10; toxic signs included squatting, ataxy, bristled hair, blood-crusted adherent margins of the eyelid, decreased respiratory rate and poor general condition	fasted animals; 4 groups of 10 female rats each; each received one dose; 35 of 40 died	triphenyltin hydroxide 96%	Pharma Forschung Toxikologie; Report 183/81; A 21593; Apr. 22, 1981; U.S. EPA, Office of Pesticide Programs; Health Effects Division; Tox Oneliners; MRID No. 00124210 and 00139030; Hoechst Aktiengesellschaft; EPA Acc. No. 071364; EPA Chem. Code: 083601; Core Grade/Tox Record No. minimum 005275
Triphenyltin hydroxide	46	160	NA	NA	rats	NA	oral	NA	NA	NA	triphenyltin hydroxide 80.0%	Products Safety Labs; T-1399; May 8, 1992; U.S. EPA, Office of Pesticide Programs; Health Effects Division; Tox Oneliners; MRID No. 42265507; EPA Chem. Code: 083601; Core Grade/Tox Record No. Guideline 009941, Jan. 5, 1993;
Triphenyltin hydroxide	46	165	113 - 230 (CL)	NA	rats	male	oral	single dose; 80, 160, 315, or 630 mg/kg doses	observed for 19 days; toxic signs 2 days after dose; toxicity develops slowly; deaths 5 - 13 days after initial dose; dose (mg/kg), number dead: 160 - 6/10; 315 - 10/10; 630 - 9/10; toxic signs included squatting, ataxy, bristled hair, blood-crusted adherent margins of the eyelid, decreased respiratory rate, dischourage of mucous feces, and poor general condition	fasted animals; 4 groups of 10 male rats each; each received one dose; 25 of 40 died	triphenyltin hydroxide 96%	Pharma Forschung Toxikologie; Report 182/81; A 21353; Apr. 22, 1981; U.S. EPA, Office of Pesticide Programs; Health Effects Division; Tox Oneliners; MRID No. 00124209; Hoechst Aktiengesellschaft; EPA Acc. No. 071364; EPA Chem. Code: 083601; Core Grade/Tox Record No. minimum 005275, minimum 003116

CHEMICAL[1]	LD50[2] mg/kg oral rat RTECS 2002	LD50[3] mg/kg oral rat Primary Reference	LD50[4] mg/kg (range) Primary Reference	LD50 CALCULATION METHOD[5] Primary Reference	ANIMAL INFORMATION (stock, weight, age)	GENDER	ROUTE/ METHOD OF EXPOSURE[6]	DOSE	OBSERVATIONS	NOTES	CHEMICAL SOURCE	PRIMARY REFERENCE
Triphenyltin hydroxide	46	240	NA	NA	rats	male	oral	NA	NA	NA	triphenyltin hydroxide tech	U.S. EPA, Office of Pesticide Programs; Health Effects Division; Tox Oneliners; EPA Chem. Code: 083601; Core Grade/Tox Record No. 001493
Triphenyltin hydroxide	46	313	232 - 422	NA	rats	male	oral	NA	NA	NA	triphenyltin hydroxide tech	Cannon Laboratories, Inc.; Jan. 31, 1978; U.S. EPA, Office of Pesticide Programs; Health Effects Division; Tox Oneliners; MRID No. 099049; EPA Chem. Code: 083601; Core Grade/Tox Record No. minimum 001492
Triphenyltin hydroxide	46	345	138 - 862	NA	rats	female	oral	NA	NA	NA	triphenyltin hydroxide tech	Cannon Laboratories, Inc.; Jan. 31, 1978; U.S. EPA, Office of Pesticide Programs; Health Effects Division; Tox Oneliners; MRID No. 099049; EPA Chem. Code: 083601; Core Grade/Tox Record No. minimum 001492
Triphenyltin hydroxide	46	360	NA	NA	rats	female	oral	NA	NA	NA	triphenyltin hydroxide tech	U.S. EPA, Office of Pesticide Programs; Health Effects Division; Tox Oneliners; EPA Chem. Code: 083601; Core Grade/Tox Record No. 001493
Triphenyltin hydroxide	46	375	280 - 502	NA	rats	male	oral	NA	NA	NA	Duter WP (TPTH 47%)	Cannon Laboratories, Inc.; Feb. 23, 1978; U.S. EPA, Office of Pesticide Programs; Health Effects Division; Tox Oneliners; MRID No. 099049; EPA Chem. Code: 083601; Core Grade/Tox Record No. minimum 001492
Triphenyltin hydroxide	46	375		NA	rats	male and female	oral	NA	NA	NA	50% WP (Reg. No. 148-1195	U.S. EPA, Office of Pesticide Programs; Health Effects Division; Tox Oneliners; MRID No. 099049; EPA Chem. Code: 083601; Core Grade/Tox Record No. minimum
Triphenyltin hydroxide	46	380	288 - 502	NA	rats	female	oral	NA	NA	NA	Duter WP (TPTH 47%)	Cannon Laboratories, Inc.; Feb. 23, 1978; U.S. EPA, Office of Pesticide Programs; Health Effects Division; Tox Oneliners; MRID No. 099049; EPA Chem. Code: 083601; Core Grade/Tox Record No. minimum 001492
Triphenyltin hydroxide	46	720	520 - 920	NA	rats	female	oral	NA	NA	NA	Kansai Robamame soin B A/F 1000B (Red Point)	Bio/dynamics, Inc.; 6584-81; Sept. 30, 1981; U.S. EPA, Office of Pesticide Programs; Health Effects Division; Tox Oneliners; MRID No. 00086072; EPA Chem. Code: 083601; Core Grade/Tox Record No. Guideline 001881
Triphenyltin hydroxide	46	830	580 - 1080	NA	rats	male and female	oral	NA	NA	NA	Kansai Robamame soin B A/F 1000B (Red Point)	Bio/dynamics, Inc.; 6584-81; Sept. 30, 1981; U.S. EPA, Office of Pesticide Programs; Health Effects Division; Tox Oneliners; MRID No. 00086072; EPA Chem. Code: 083601; Core Grade/Tox Record No. Guideline 001881
Triphenyltin hydroxide	46	840	512 - 1378	NA	rats	unknown	oral	NA	NA	NA	Duter Flowable 30 (TPTH 19.7%)	Cannon Laboratories, Inc.; 9E-6359; Nov. 13, 1979; U.S. EPA, Office of Pesticide Programs; Health Effects Division; Tox Oneliners; MRID No. 00086591; EPA Chem. Code: 083601; Core Grade/Tox Record No. minimum 001496
Triphenyltin hydroxide	46	1200	600 - 1800	NA	rats	male	oral	NA	NA	NA	Kansai Robamame soln B A/F 1000B (Red Point)	Bio/dynamics, Inc.; 6584-81; Sept. 30, 1981; U.S. EPA, Office of Pesticide Programs; Health Effects Division; Tox Oneliners; MRID No. 00086072; EPA Chem. Code: 083601; Core Grade/Tox Record No. Guideline 001881
Valproic acid	670	670	598 - 750 (95% CL; slope = 1.2 [1.0 - 1.4; 95% CL])	Litchfield and Wilcoxon method (1949)	Osborne-Mendel rats; young adult	male and female	oral intubation	2% in water	usual observaton time of 2 weeks; depression, scrawny appearance, diarrhea; dead within 2 hour - 2 days	18 hours fasting; groups of 10 rats; evenly divided between male and female	commercially available material	**RTECS REFERENCE** *CODEN: FCTXAV Bibliographic Data: Food and Cosmetics Toxicology. (London, UK) V.1-19, 1963-81. For publisher information, see FCTOD7. CODEN Reference: 2,327,1964.---* Jenner PM, Hagan EC, Taylor JM, Cook EL, Fitzhugh OG. 1964. Food flavorings and compounds of related structure I. Acute Oral Toxicity. Fd Cosmet Toxicol 2:327-334. *U.S. Food and Drug Administration, Washington, D.C.*
Valproic acid	670	1480	NA	NA	rats	male and female	oral	NA	NA	reference in French	NA	Deboeck AM. Valproic acid salt, its preparation and utilization. European Patent Office, Publication No. EP 0078785A1. Application date 11/03/82.
Verapamil HCl	108	108	NA	NA	rats	NA	oral	NA	NA	NA	NA	**RTECS REFERENCE** *CODEN: NIIRDN Bibliographic Data: Drugs in Japan (Ethical Drugs). (Yakugyo Jiho Co., Ltd., Tokyo, Japan) CODEN Reference: 6,766,1982.*
Verapamil HCl	108	114	97 - 135	Litchfield and Wilcoxin (1949)	rats	NA	oral	NA	NA	reference in German	NA	Haas VH, Hartfelder G. 1962. A-Isopropyl-a-[(N-methyl-N-homoveratryl g-amino-propyl]-3,4-dimethoxyphenylacetonitrile, eine Substanz mit coronargefaferweiternden Eigenschaften 12:549-558.

CHEMICAL[1]	LD50[2] mg/kg oral rat RTECS 2002	LD50[3] mg/kg oral rat Primary Reference	LD50[4] mg/kg (range) Primary Reference	LD50 CALCULATION METHOD[5] Primary Reference	ANIMAL INFORMATION (stock, weight, age)	GENDER	ROUTE/ METHOD OF EXPOSURE[6]	DOSE	OBSERVATIONS	NOTES	CHEMICAL SOURCE	PRIMARY REFERENCE
Xylene	4300	1537	1294 - 1781 (95% CL; slope = 9.6)	Finney (1971) Probit Analysis	ChR-CD; ave bw for each group = 253, 251, and 256 g; young adults	male	oral; intragastric intubation	single dose in aqueous solution (25%); doses = 1200, 1600, 2000 mg/kg; dose = 1.2 - 2.0 mL	16 dead; observed over 14-day recovery period; 1200 dose: lacrimation and wet perineal area (1/10 dead); 1600 dose: tremors, salivation, prostration, piloerection, lacrimation, wet perineal area, ataxia (7/10 dead; death within 15 hours after dosing); 2000 dose: tremors, severe fascicutations, ataxia, lacrimation, prostration, piloerection, lethargy, wet and stained perineal area, weakness (8/10 dead)	3 groups of 10 rats each; date of test is 1979	NA	from EPA TSCATS database; Oral LD50 test (1979), EPA Document No. 878221390 Fiche No. OTS0215213; *E.I Dupont DeNemours & Co., Inc./Haskell Labs*
Xylene	4300	4300	NA	NA	white rats; Wistar; 175- 250 g	male	oral; stomach tube	single dose in either olive oil or corn oil solution emulsified with aqueous solution of acacia; or undiluted; no more than 7 cc administered	all surviving rats observed up to 2 weeks; 20 rats used	percent of isomers: *o* = 19; *p* = 24; *m* = 52	NA	**RTECS REFERENCE** *CODEN: AMIHAB Bibliographic Data: AMA Archives of Industrial Health. (Chicago, IL) V.11-21, 1955-60. For publisher information, see AEHLAU. CODEN Reference: 14,387,1956.*-- Wolfe MA, Rowe VK, McCollister DD, Hollingsworth RL, Oyen F. 1956. Toxicological studies of certain alkylated benzenes and benzene: experiments on laboratory animals. AMA Archives of Industrial Health. 14:387-397. *The Dow Chemical Co. Midland, MI.*
Xylene	4300	8314	7716 - 8803 (95% CL)	Finney (1971) Probit Analysis	ChR-CD; ave bw each group = 276, 258, 286, 262, 256 g; young adults	male	oral; intragastric intubation	single dose in corn oil (50% solution); doses = 7500, 8000, 9000, and 9500 mg/kg; dose = 3.93-5.25 mL	16 dead; observed over 14-day recovery period; 7500 dose: (3/10 dead); 8000 dose: (3/10 dead); 9000 dose: (6/10 dead); 9500 dose (10/10 dead); salivation, lethargy, ruffled fur, diarrhea, respiratory congestion, wet/bloody perineal areas	4 groups of 10 rats each; date of test is 1975	NA	from EPA TSCATS database; Oral LD50 test (1975), EPA Document No. 878221390 Fiche No. OTS0215213; *E.I Dupont DeNemours & Co., Inc./Haskell Labs*
Xylene	4300	8620 (10 mL/kg; density = 0.862)	6465 - 11465 (CL; reported as 7.5 - 13.3 mL/kg)	Litchfield and Wilcoxon method (1949)	Long-Evans rats; 150-300 g	male	oral; intragastric intubation	single dose; graded doses up to 25 mL/kg; undiluted samples	observed for 14 days; mortality values based on the number of animals which died during this time; 6 rats per dose	ortho, meta, and para xylene; ethyl benzene	aromatic concentrated from commercial source by an absorption technique; 98% aromatic	Hine CH, Zuidema HH. 1970. The toxicological properties of hydrocarbon solvents. Industrial Medicine. 39(5):39-44.

Gray cells highlight the rationale for exclusion of reference value.

[1] NICEATM/ECVAM validation study chemicals

[2] RTECS® database value at the time of database search by NICEATM (2002)

[3] Value reported in the reference publication

[4] Range (if provided in the reference publication)

[5] Method reported in the reference publication

[6] Acute toxicity exposure test method

NA - information not reported/available

CL - Confidence Limit

CI - Confidence Interval

SE - Standard Error

UDP - Up-and-Down Procedure

TSCATS - Toxic Substances Control Act Test Submissions

RTECS - Registry of Toxic Effects of Chemical Substances

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Appendix H-2

Evaluation of the Candidate Reference Data

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APPENDIX H-2

In Vivo Rodent Toxicity Reference Values Used to Assess the Accuracy of the 3T3 and NHK NRU Test Methods

Evaluation of the Candidate Reference Data

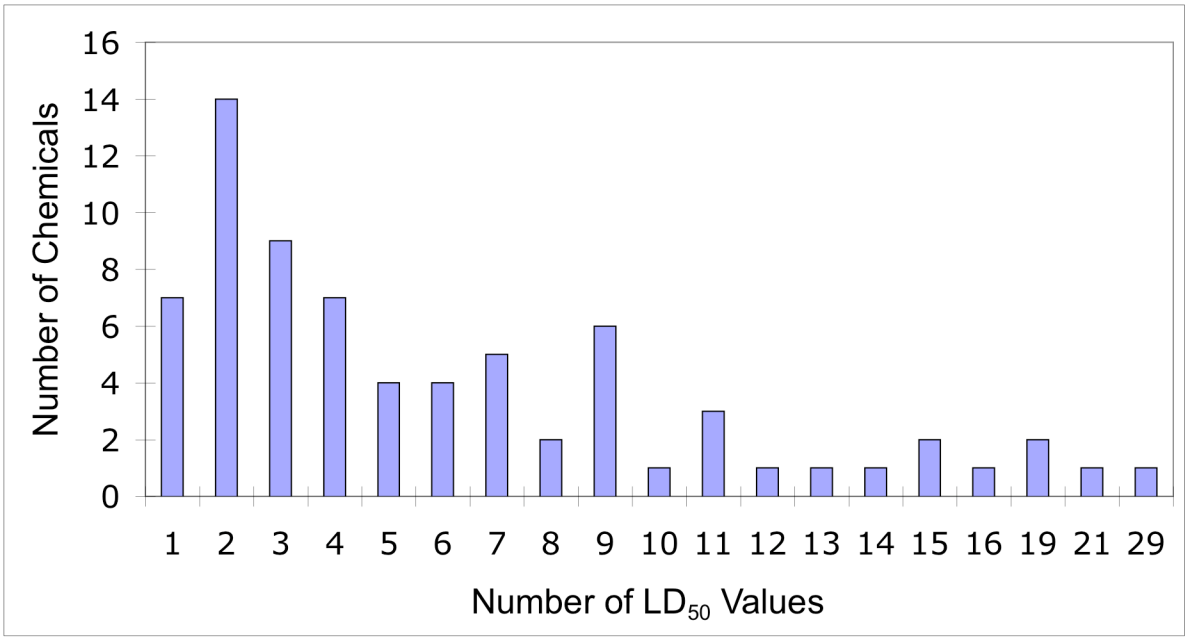
The 491 LD_{50} values identified by the literature search consisted of 485 rat oral LD_{50} values and six mouse oral LD_{50} values. Mouse oral LD_{50} values were used to determine reference values for colchicine, epinephrine bitartrate, and propylparaben since rat oral LD_{50} values for these three chemicals could not be located. Thirty rat oral LD_{50} values were believed to be duplicates of other reported values because the LD_{50} values and the experimental information matched exactly those cited by other publications from the same author(s) or because the same animal data were used to calculate multiple LD_{50} values (e.g., to evaluate various methods of calculation).

Two rat oral LD_{50} values provided by RTECS® were incorrect, possibly due to typographical errors. For the value of 200 mg/kg for acetylsalicylic acid, RTECS® cited a review by Diechmann (1969) that referred to a paper by Coldwell and Boyd (1966). Coldwell and Boyd (1966), however, actually reported an LD_{50} of 920 mg/kg. For sodium oxalate, RTECS® cited a review paper by Walum (1998) for an LD_{50} value of 11160 mg/kg. Although Walum (1998) provided no source, the LD_{50} is the same as that used in the MEIC study (Ekwall et al. 1998b). That LD_{50} was calculated from the LD_{50} for oxalic acid (Ekwall et al. 1998b), which is 7500 mg/kg according to RTECS®. The source for this figure, however, provides a value of 7.5 mL/kg of 5% oxalic acid (Vernot et al. 1977). Extrapolating this to sodium oxalate (MW = 134.0 g/mole vs 90.04 g/mole for oxalic acid) yields an LD_{50} of 558 mg/kg.

After exclusion of the 30 duplicate values and the two erroneous values for acetylsalicylic acid and sodium oxalate, 459 records remained for further evaluation. **Figure H2-1** shows the frequency of the number of LD_{50} values retrieved for the 72 chemicals. The number of LD_{50} values identified for any one chemical ranged from one to 29. The highest frequency was two LD_{50} values per chemical (14 chemicals). The highest number of LD_{50} values

retrieved for an individual chemical (acetonitrile) was 29. A large number of LD_{50} values were also identified for hexachlorophene (21), ethylene glycol (19), and carbon tetrachloride (19). Only one LD_{50} value was identified for seven chemicals: aminopterin, digoxin, epinephrine bitartrate, glutethimide, physostigmine, and propranolol HCl.

Figure H2 - 1 Distribution of the Number of LD_{50} Values Per Chemical



Protocols Used for the Candidate Reference Data

The LD_{50} data were collected using various protocols; however, information on the protocol details was often incomplete due to limited documentation in the reports. The 459 remaining data records exhibited the following characteristics:

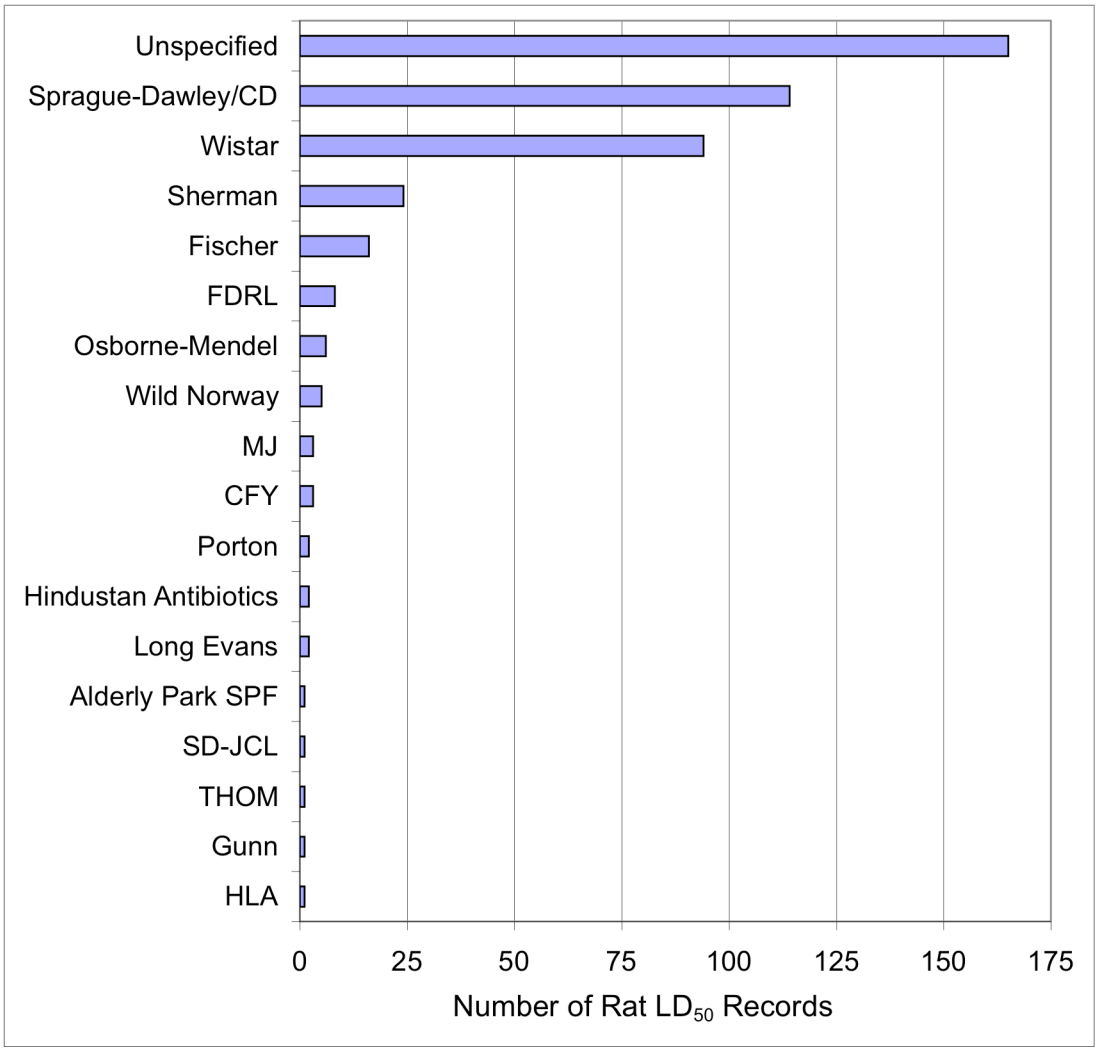
- 64% (293/459) specified the stock or strain of rodent used. The remaining 36% (167/459) that did not specify the stock/strain described rats as rats, albino rats, white rats, rats of different strains, and mice were described as mice.
- 63% (290/459) included age or weight information for the rodents.
- 77% (354/459) specified the gender of the rodent.
- 66% (305/459) stated the method used to calculate the LD_{50}.

- 48% (221/459) reported the number of rodents used at each dose and 47% (216/459) reported the total number of rodents used.
- 26% (118/459) specified the doses used.
- 14% (66/459) quantitatively specified the purity of the chemical used. Of the remaining records, 18% (83/459) described the purity qualitatively using such terms as "technical grade," "pure," "reagent grade," and "pharmaceutical grade," 11% (51/459) named only the source of the chemical, and 56% (259/459) provided no information on the chemical.
- 13% (61/459) reported the deaths at each dose.

Although many LD_{50} studies did not specify the strain or stock of rat used, the 293 studies that provided this information indicated that Sprague-Dawley/CD rats were the strain most frequently used (see **Figure H2-2**). Wistar rats were also frequently used. Strains such as Alderly Park, SD-JCL, THOM, Gunn, and HLA were the least frequently used. Of the six mouse LD_{50} values, the strain was unspecified for two studies. The other four LD_{50} values were obtained using CD-1, MS/Ae, dd, and B6D1F1(BDF1) mice.

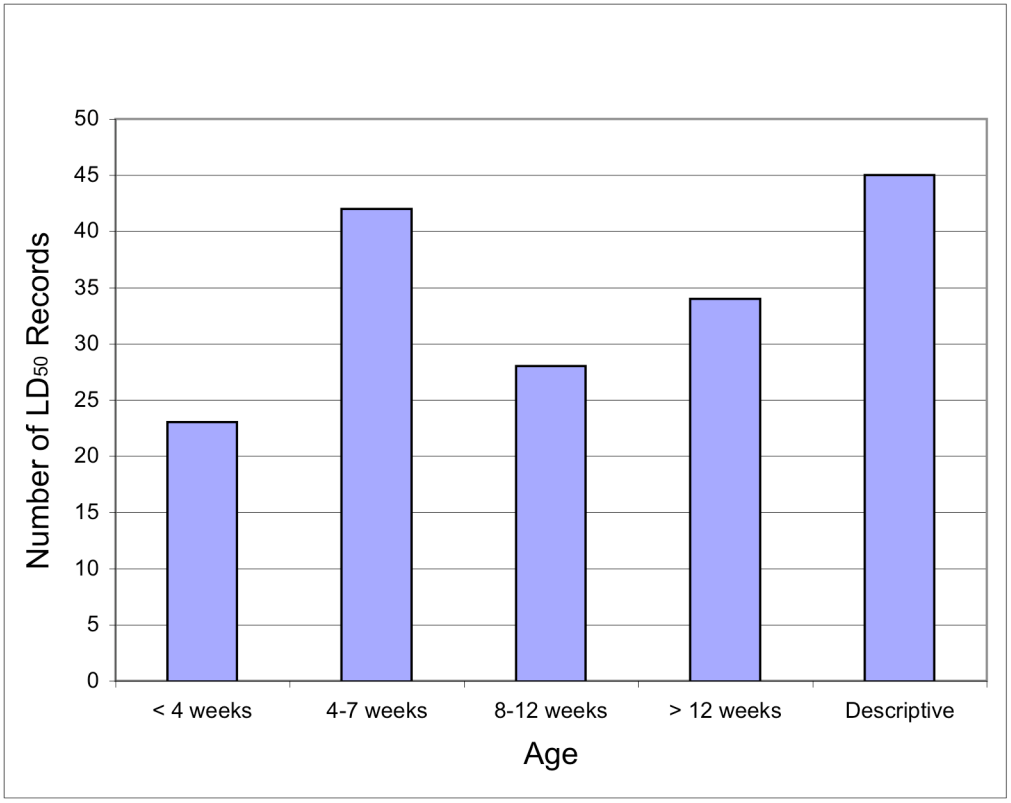
Of the 354 studies that reported rodent gender, the most frequently used gender for both rodents was male, which was used for 193 (55%) LD_{50} values. Female rodents were used for 104 (29%) LD_{50} values, both sexes were used for 55 (16%) LD_{50} values, and rodents of unspecified gender were used for 104 (29%) LD_{50} values.

Figure H2 - 2 Distribution of Rat Stocks/Strains



The age of the rodents used for the acute oral lethality studies also varied. Of the 174 LD_{50} studies that reported age, the most frequently used age was 4-7 weeks, which was reported for 42 (24%) LD_{50} values (see **Figure H2-3**). The majority of the reported ages were descriptive. Forty-five (26%) LD_{50} values used rodents that were described as young, adults, young adults, or older adults. Thirty (17%) LD_{50} studies used 8-12 week old rodents, which is the age recommended by current oral acute toxicity test guidelines (OECD 2001a, c, d; EPA 2002a). Twenty-three (13%) LD_{50} values were determined using rodents less than four weeks of age, and 34 (20%) LD_{50} values were determined using rodents greater than 12 weeks old.

Figure H2 - 3 Distribution of Rat and Mouse Ages



The duration of animal observation was not specified for 39% (179/459) of the LD_{50} reports. Of the 280 (61%) studies that reported the duration of observation, 136 (48%) reported an observation period of 14 days, which is recommended in the current oral acute toxicity test guidelines (OECD 2001a, c, d; EPA 2002a). The second most commonly used observation period was seven days, which was reported by 59 (21%) studies. Clinical signs were reported in 30% (137/459) of the studies.

Of the 305 studies that reported the method used to calculate the LD_{50} value, the most frequently used were the graphical log-probit methods such as Litchfield and Wilcoxon (1949), with 99 (33%) LD_{50} values, and Miller and Tainter (1944), with 24 (8%) LD_{50} values. The maximum likelihood probit method of Bliss (1938) and modifications were used for the calculation of 46 (15%) LD_{50} values. An additional 36 (12%) LD_{50} values were calculated using methods referred to in a general way as probit or log probit methods. The moving average method, such as that of Thompson (1947) or Weil (1952), was cited for 57

(19%) LD_{50} values. Thirteen (4%) LD_{50} values were described as being calculated by one method or another (e.g., by Weil or Litchfield and Wilcoxon), or by methods that were described generally, such as graphical or approximative. Some of the least frequently used methods were linear regression (six values), UDP (four values), and linear interpolation (one value). Estimates of variability such as confidence limits, standard error, or standard deviation were included in 62% (283/459) of the LD_{50} reports, but only 6% (28/459) included slopes.

Final Reference Values

Based on the study exclusion criteria described in **Section 4.1.2**, 73 (16%) of the 459 records identified were excluded. Thirty-one LD_{50}values were excluded because they were reported as ranges, 21 were excluded because the rats were less than four weeks old, five were excluded because the rats were feral, five were excluded because the rats were anesthetized, and four were excluded because the chemical administered was mixed with food. Additionally, four LD_{50} values for copper sulfate pentahydrate were excluded because very low purity (i.e., $\leq$ 20%) chemical was used. Three LD_{50} values were excluded because they were outliers at the 99% level (Dixon and Massey 1981) compared with the rest of the values for the particular chemical. These included one ethylene glycol value of 17,800 mg/kg (range of the other 16 values = 4000 - 9900 mg/kg), one meprobamate value of 794 mg/kg (range of other six values = 1286 - 1522 mg/kg), and one mercury chloride value of 160 mg/kg (range of other 10 values = 12 - 92 mg/kg). **Appendix H-1** provides the individual rationale for each LD_{50} value excluded by shading the cell that contains the reason for exclusion.

Triethylenemelamine, trichloroacetic acid, and xylene had the largest confidence limits in proportion to the geometric means. The confidence limits for triethylenemelamine and xylene were calculated from four LD_{50} values while those for trichloroacetic acid were calculated with five LD_{50} values. Nicotine and 2-propanol had the smallest confidence limits even though the number of values per chemical were similar to that for the chemicals with large confidence limits (nicotine N= 4, 2-propanol N = 6).